

AD-A113 146

ERTEC WESTERN INC. LONG BEACH CA

F/G 8/7

MX SITING INVESTIGATION. MINERAL RESOURCES SURVEY, SEVEN ADDITI--ETC(U)

JUN 81

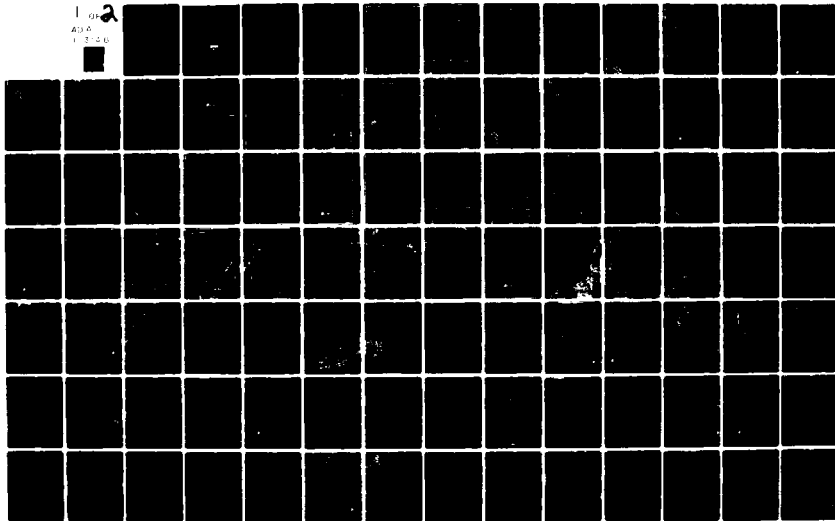
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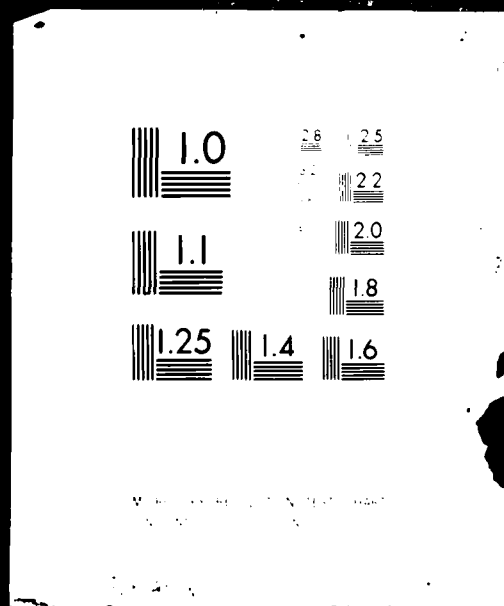
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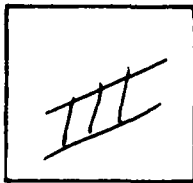
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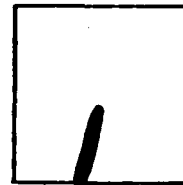
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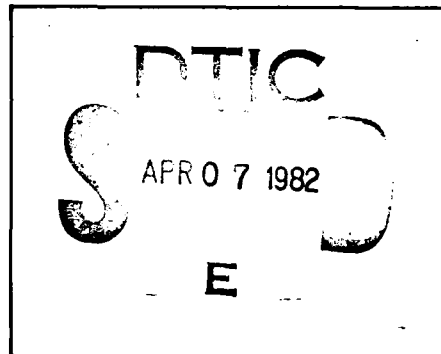
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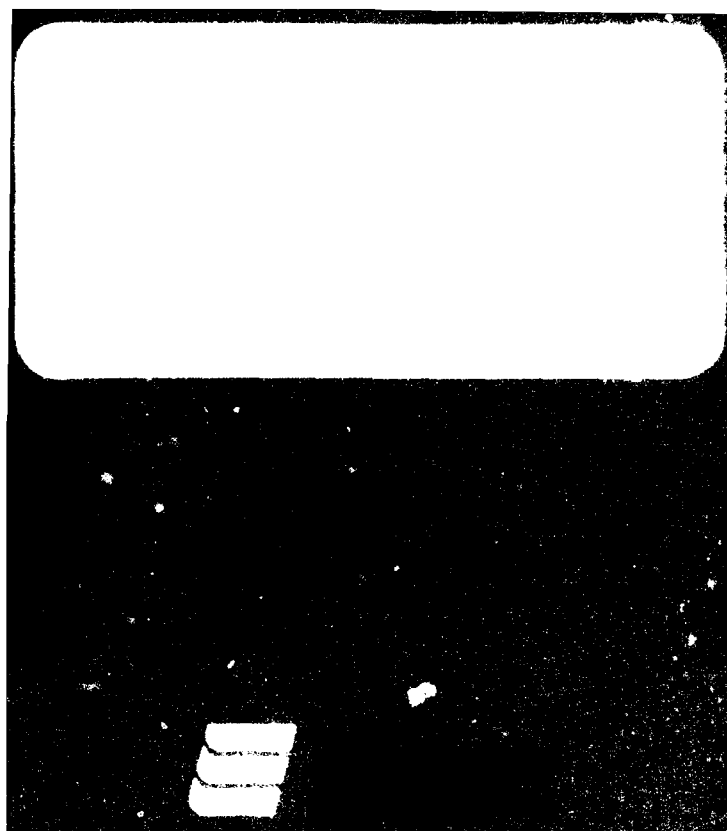


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SEVEN ADDITIONAL VALLEYS  
NEVADA/UTAH SITING AREA

VOLUME IV

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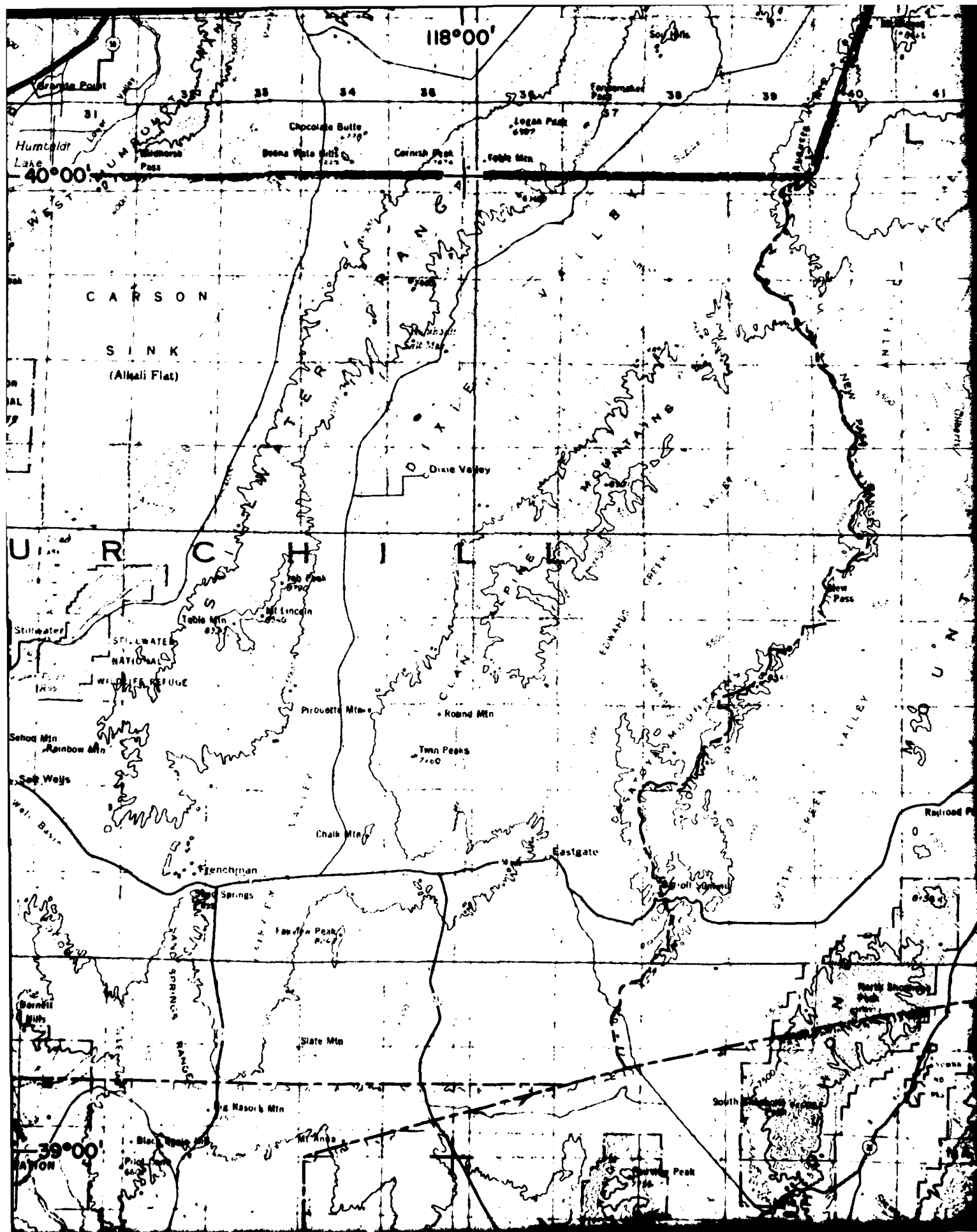
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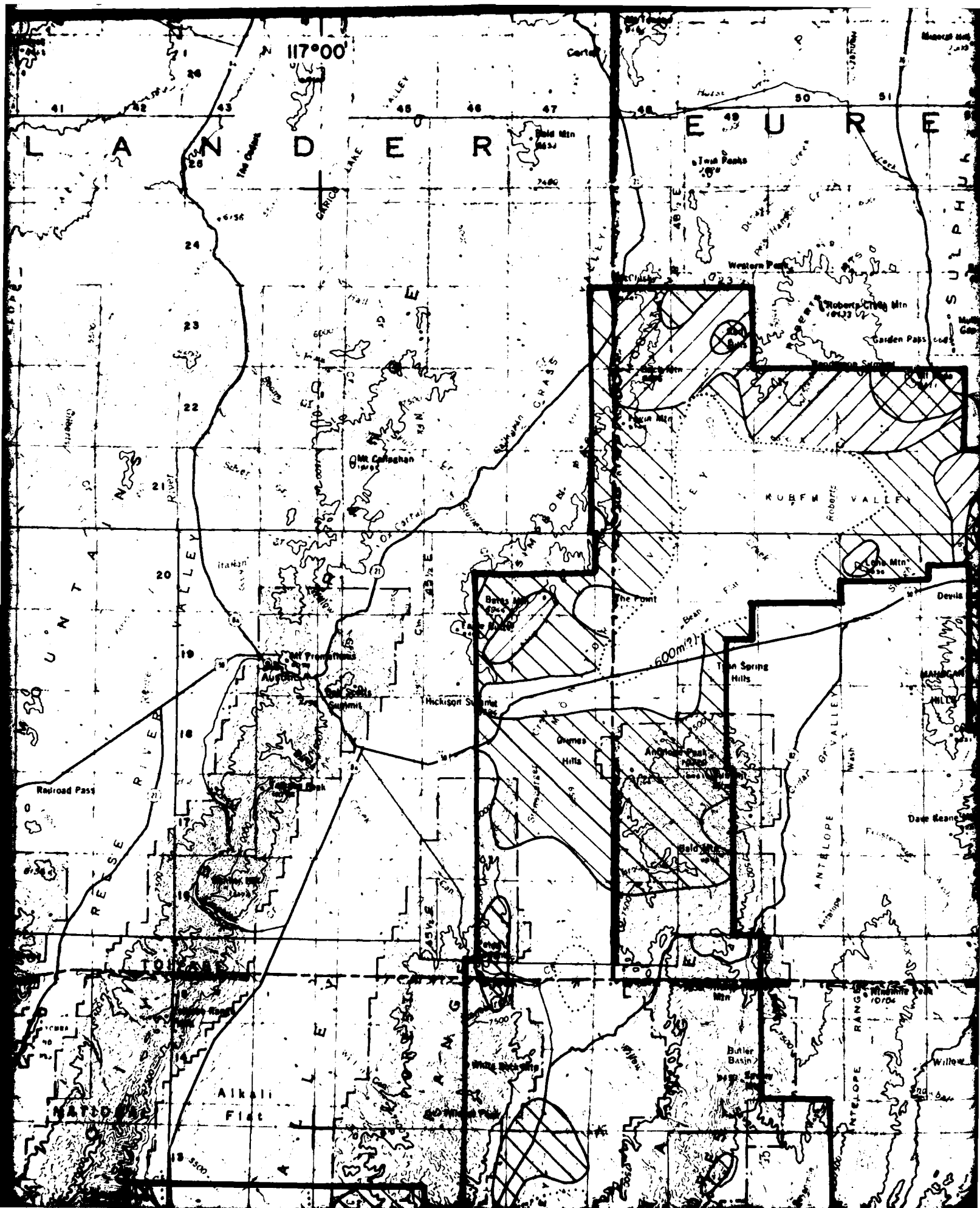
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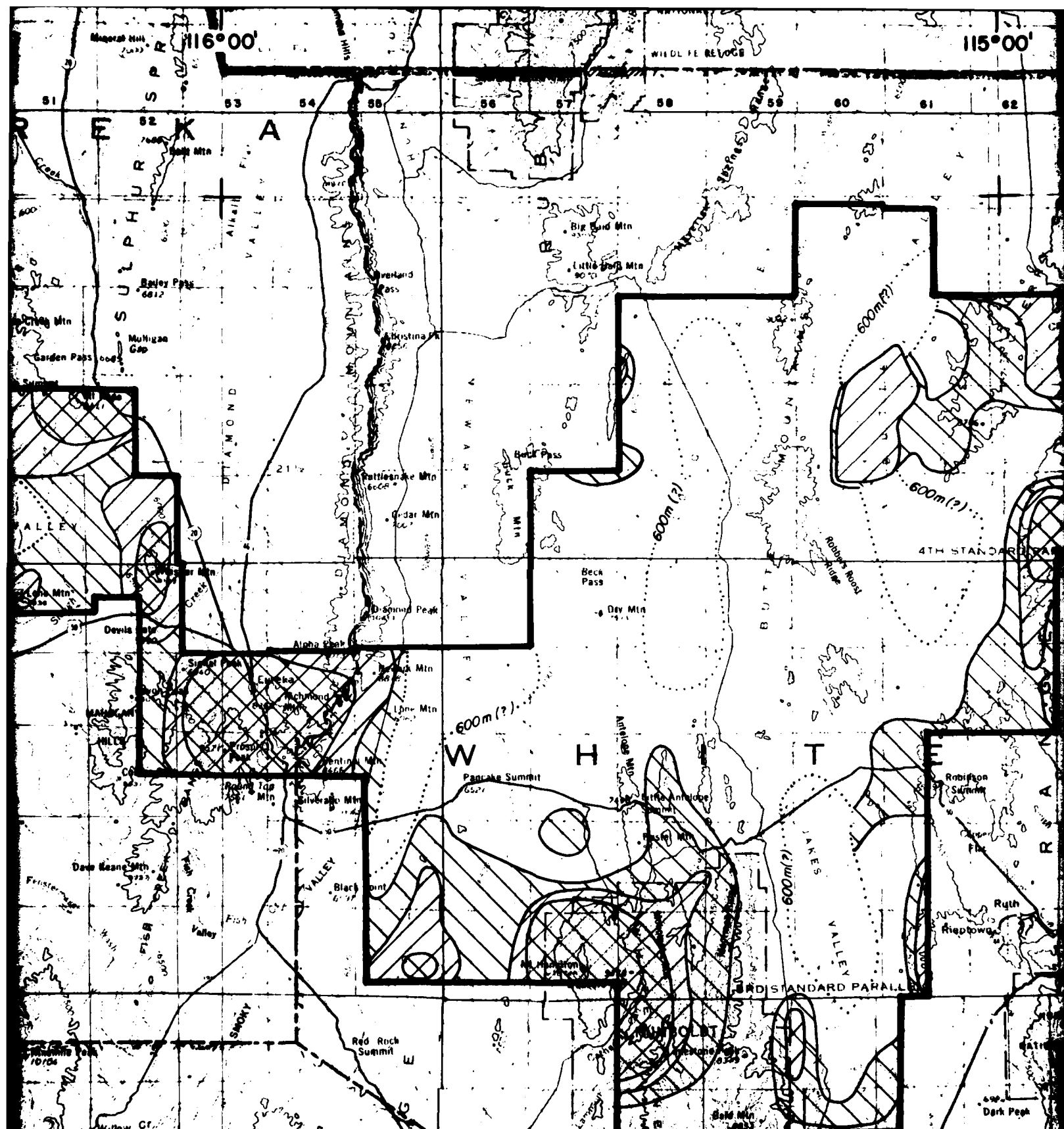
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3777 Long Beach Boulevard  
Long Beach, California 90807

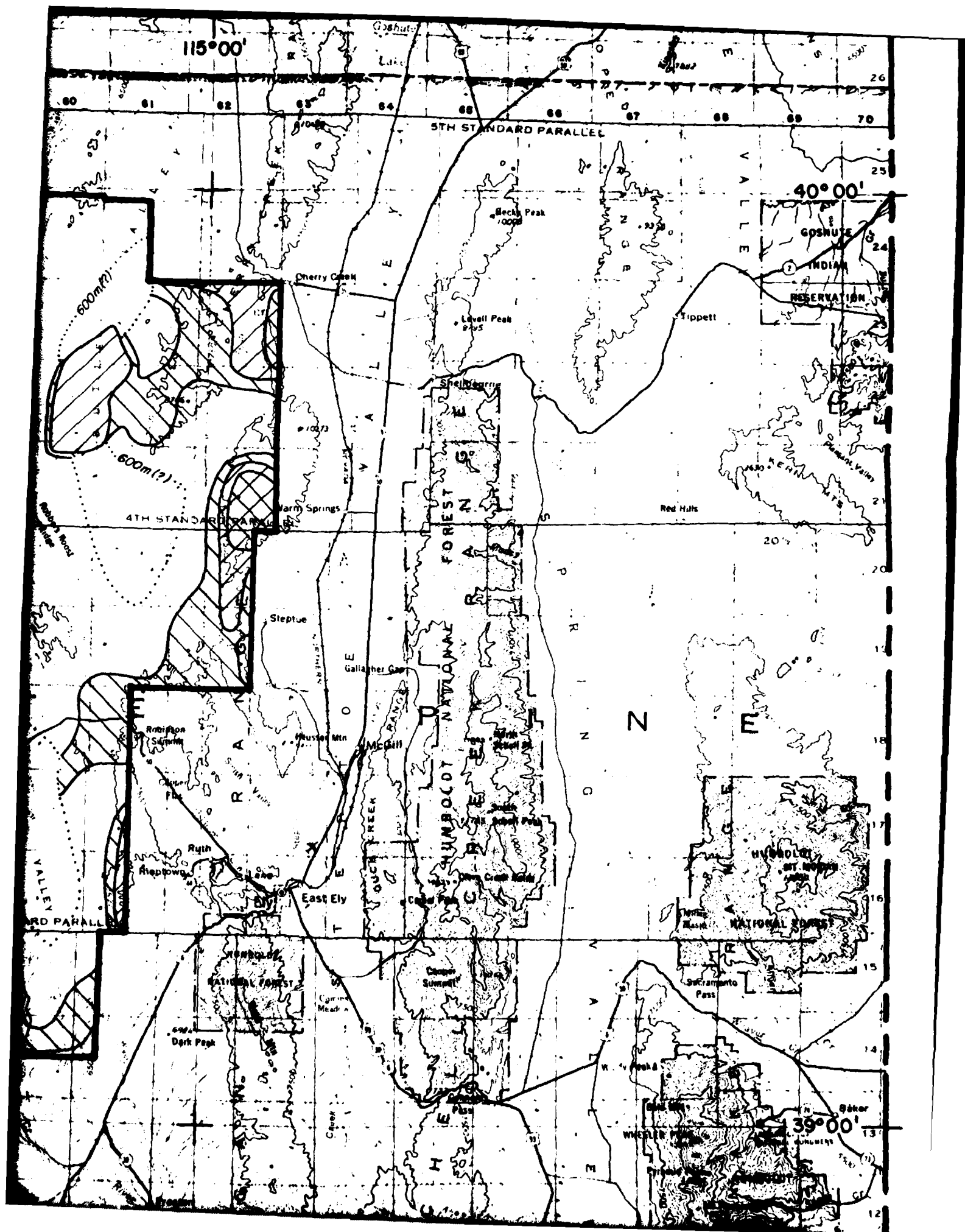
23 June 1981

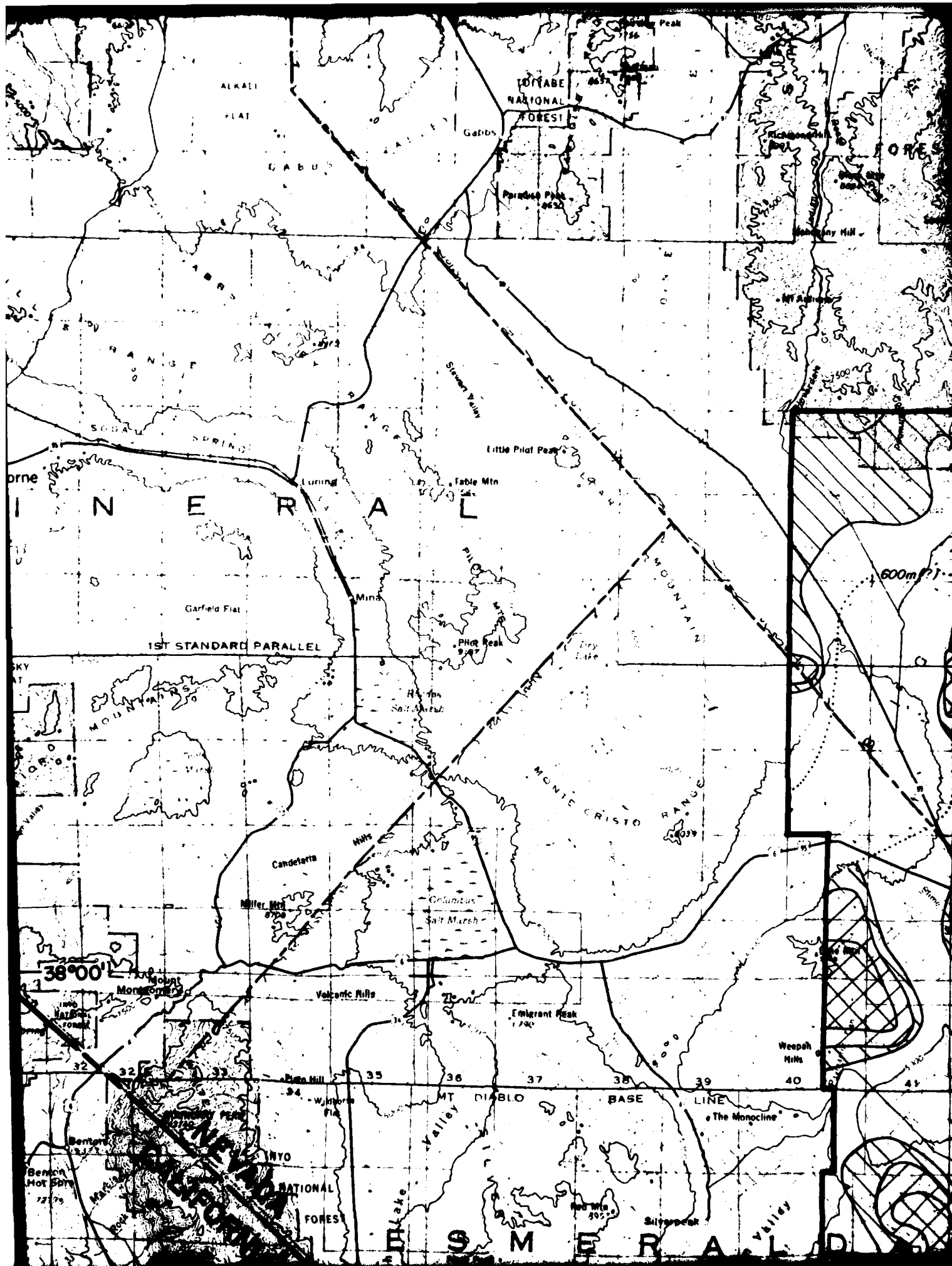
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1. REPORT NUMBER <b>E-TR-50-IV</b>	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) <b>Mineral Resources Survey Seven Additional Valleys Nevada/Utah Siting Area Vol II</b>		5. TYPE OF REPORT & PERIOD COVERED <b>Final</b>
7. AUTHOR(s) <b>ERTEC Western, Inc</b>		6. PERFORMING ORG. REPORT NUMBER <b>E-TR-50</b>
9. PERFORMING ORGANIZATION NAME AND ADDRESS <b>Ertec Western Inc. (formerly Fuoro National) P.O. Box 7765 Long Beach Ca 90807</b>		8. CONTRACT OR GRANT NUMBER(s) <b>F04704-80-C-0006</b>
11. CONTROLLING OFFICE NAME AND ADDRESS <b>U.S. Department of the Air Force Space and Missile Systems Organization Norton AFB Ca 92409 (SAMSO)</b>		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS <b>64312 F</b>
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE <b>23 June 1981</b>
		13. NUMBER OF PAGES <b>11</b>
		15. SECURITY CLASS. (of this report) <b>Unclassified</b>
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18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) <b>Geology, Mineral, Tectonic, Stratigraphy, Metals, Base Metals, Ferrous Metals, Uranium, Oil, Gas, Geothermal, Oil shale, Coal, Lignite, Potash, Phosphate, Sodium, Sand, Gravel, Mining Claims, Wells, Gold</b>		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) <b>Results of the evaluation of the mineral- and energy- resource potential of seven MX valleys in Nevada shows that besides the existing mining activities which occur in many mining districts in this area, a large portion of the area is also interpreted to possess high, good, and speculative potential for new economics discoveries to the year 2000 and beyond.</b>		

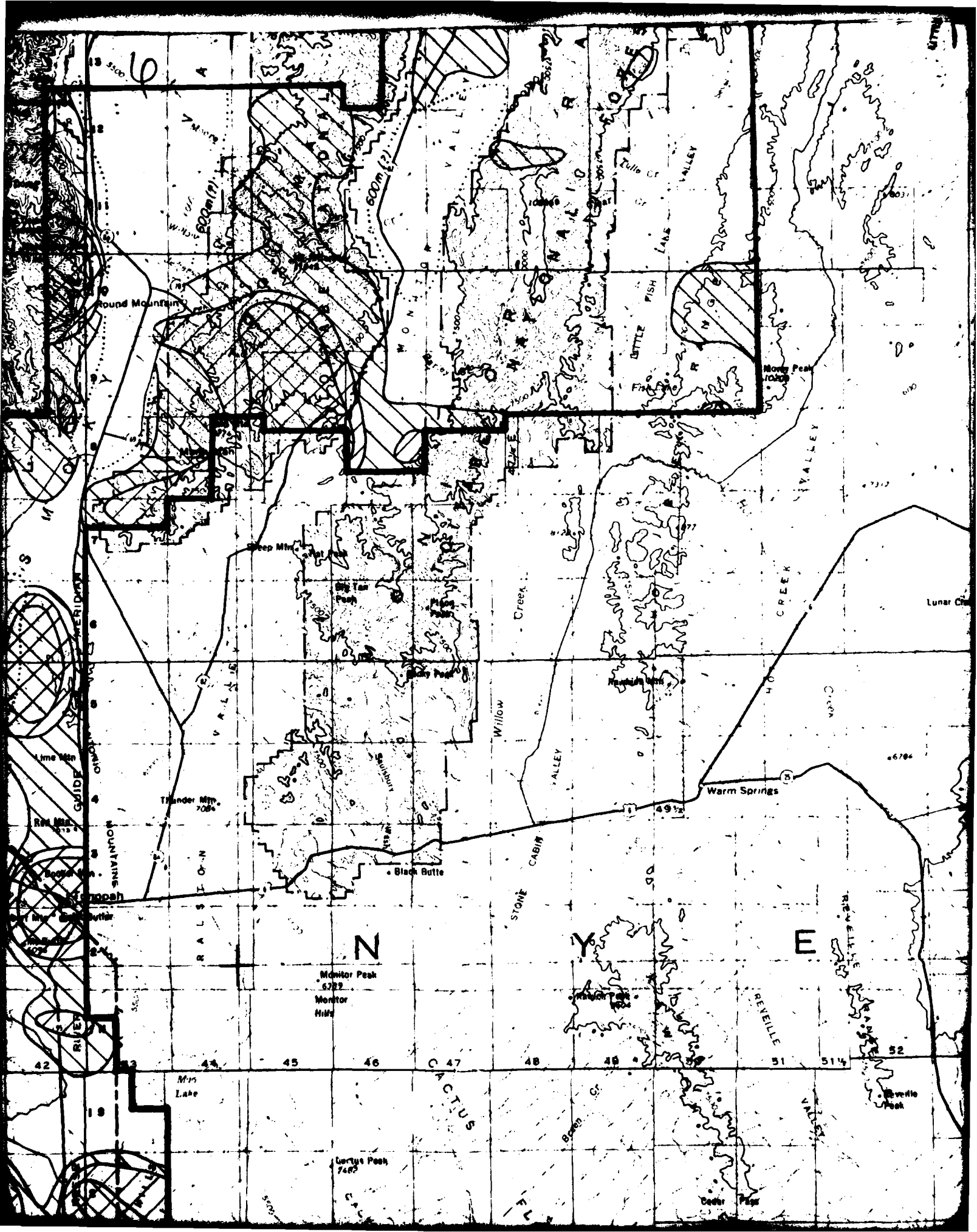




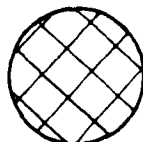
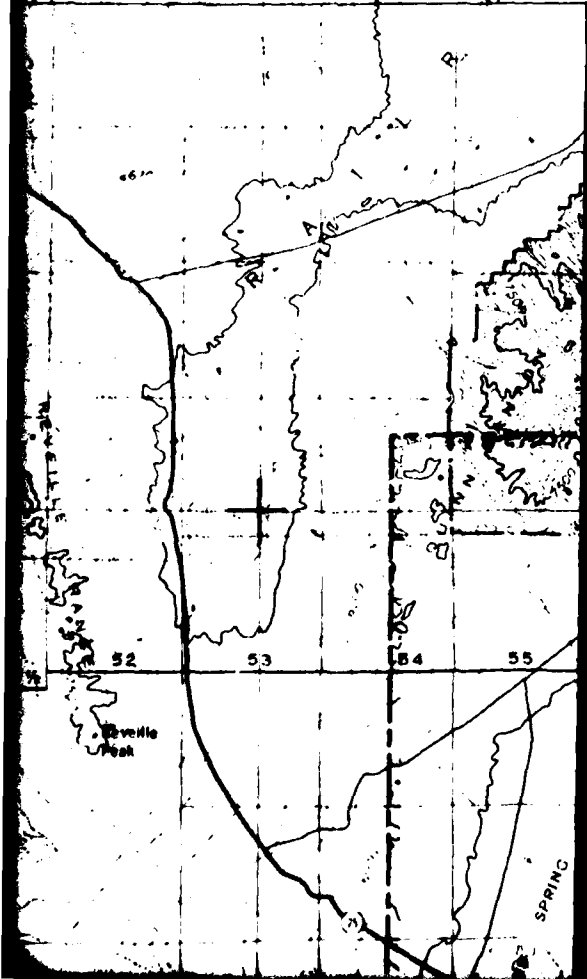
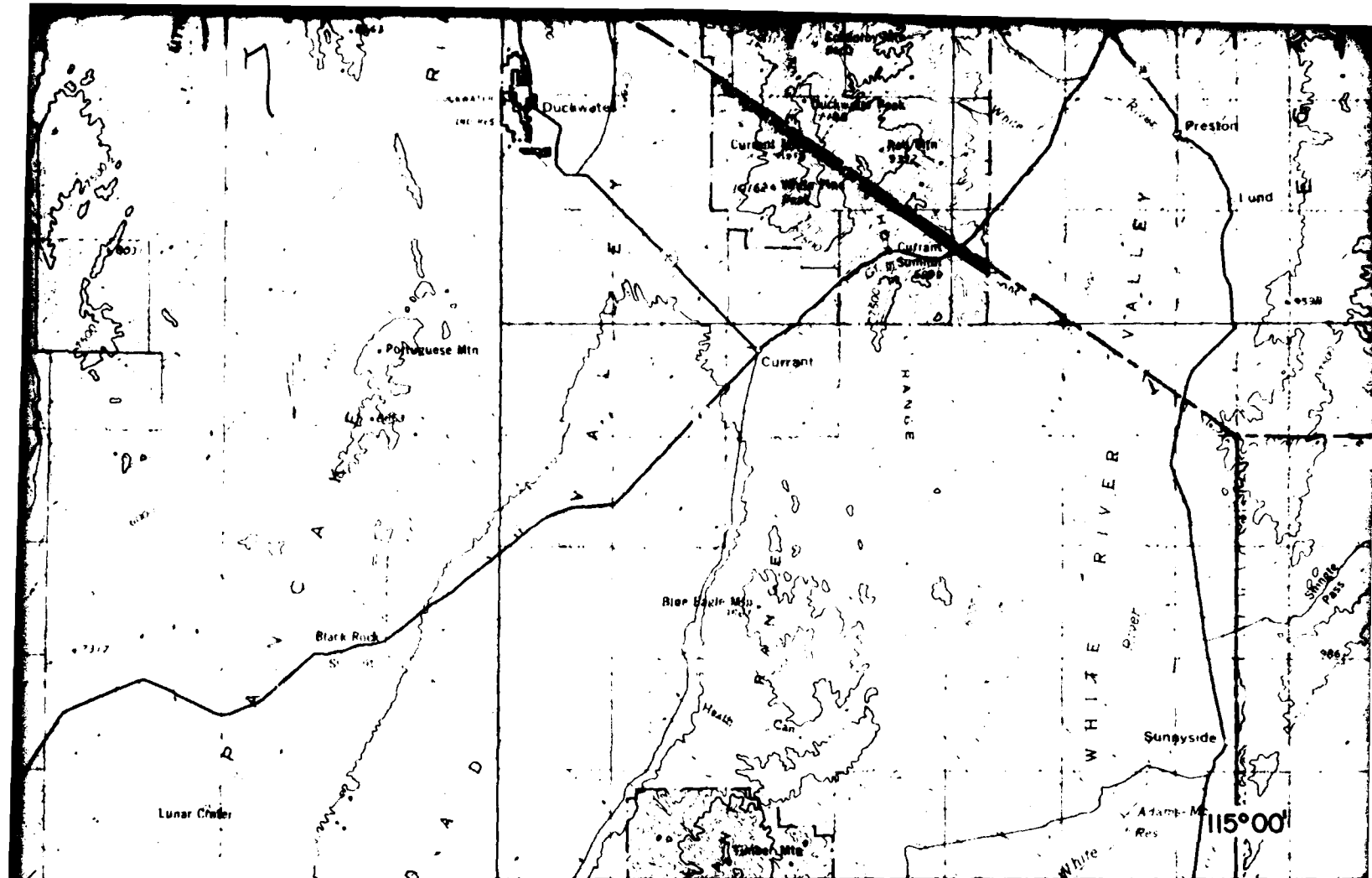




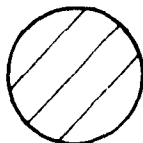




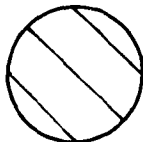




HIGH POTENTIAL



GOOD POTENTIAL



SPECULATIVE POTENTIAL

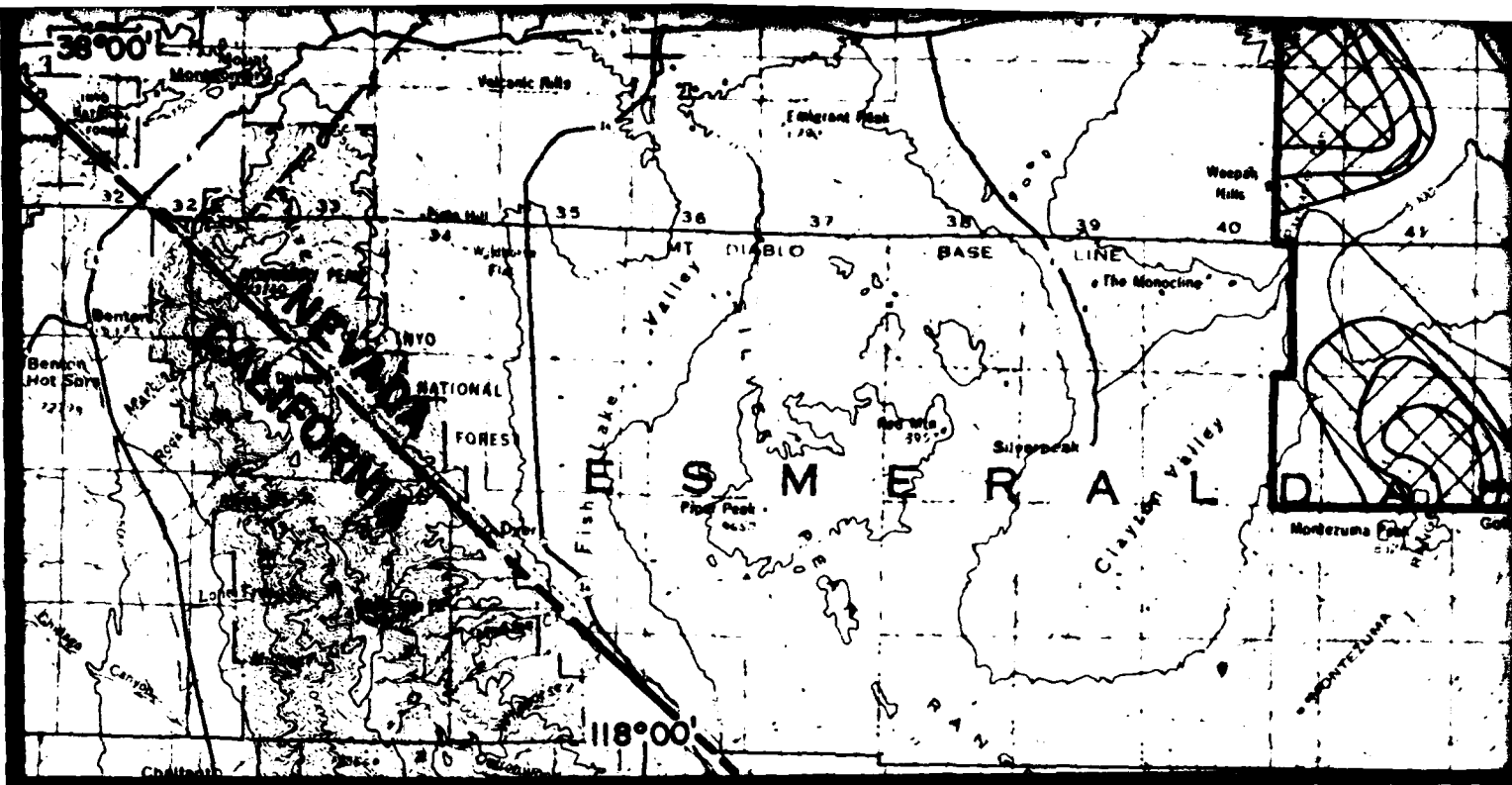
... 600 m (?) ... APPROXIMATE DEPTH TO BEDROCK IN METERS



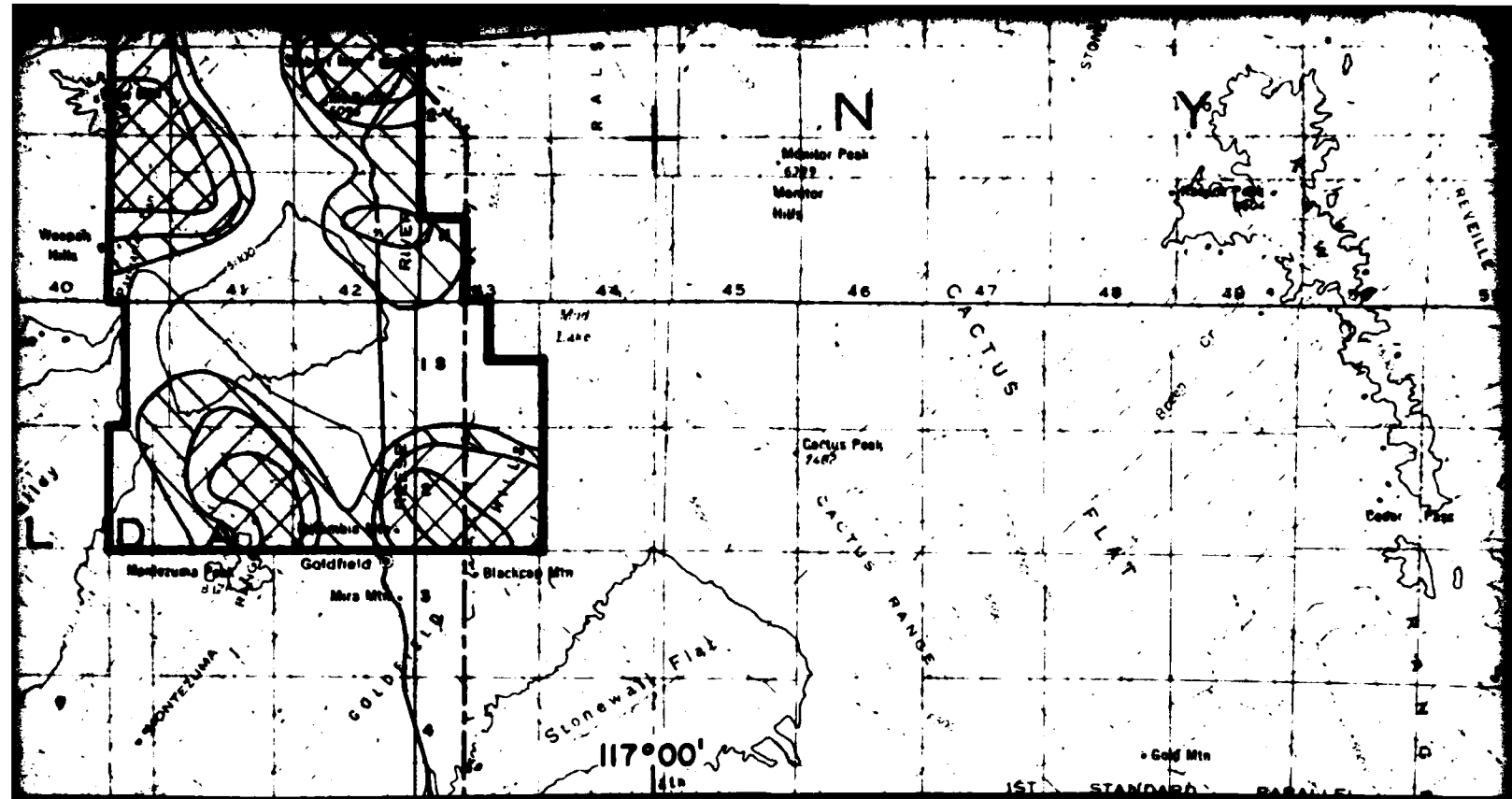
MX  
STU

1 25 OCT  
2 27 FEB



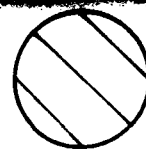
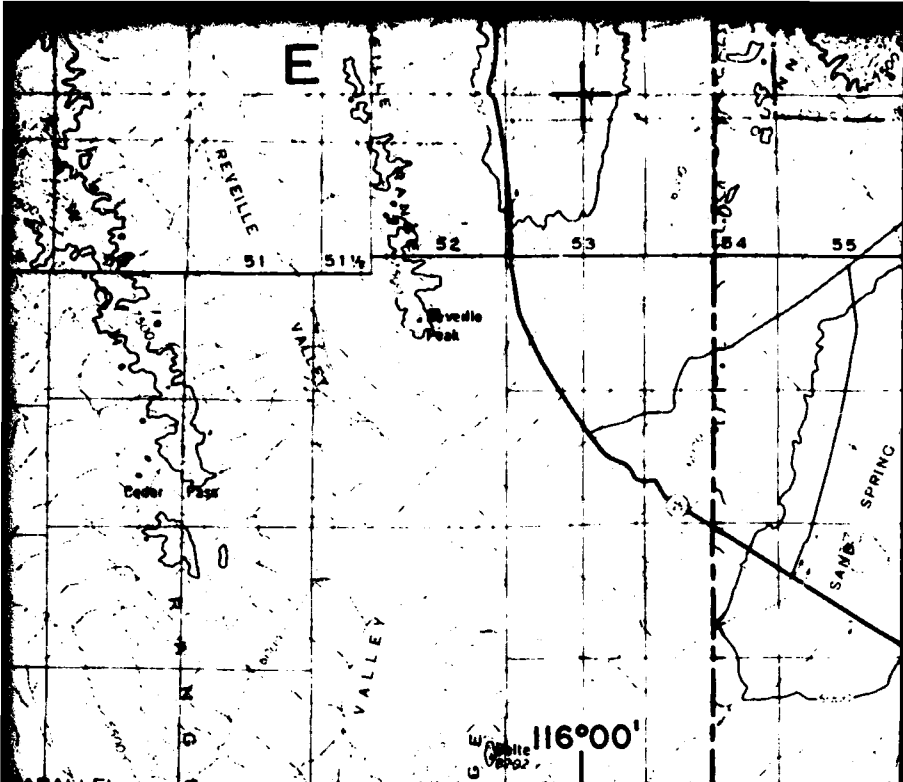


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1



SPECULATIVE POTENTIAL

... 600 m (?) ... APPROXIMATE DEPTH  
BEDROCK IN METERS

111

1

SCALE 1: 600,000



NTIAL

VE POTENTIAL

ATE DEPTH TO  
N METERS



MX ADDITIONAL VALLEY MINERAL RESOURCES SURVEY  
STUDY AREA BOUNDARY SEPT. 26, 1980

- 1 25 OCT 1979
- 2 27 FEB 1980
- 3 20 JUN 1980
- 4 \_\_\_\_\_
- 5 \_\_\_\_\_
- 6 \_\_\_\_\_
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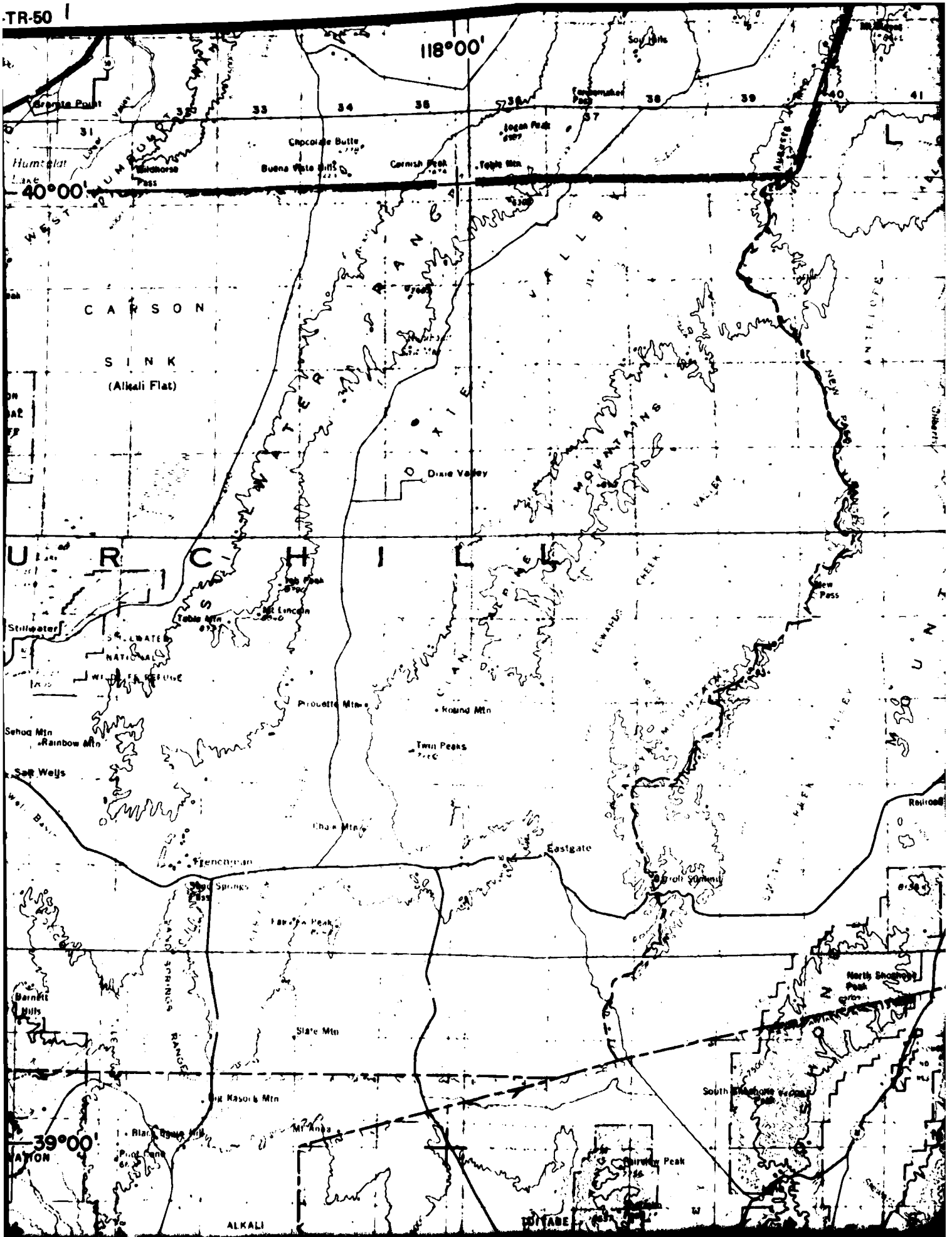
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DEPARTMENT OF THE AIR FORCE  
BMO/AFRCE-MX

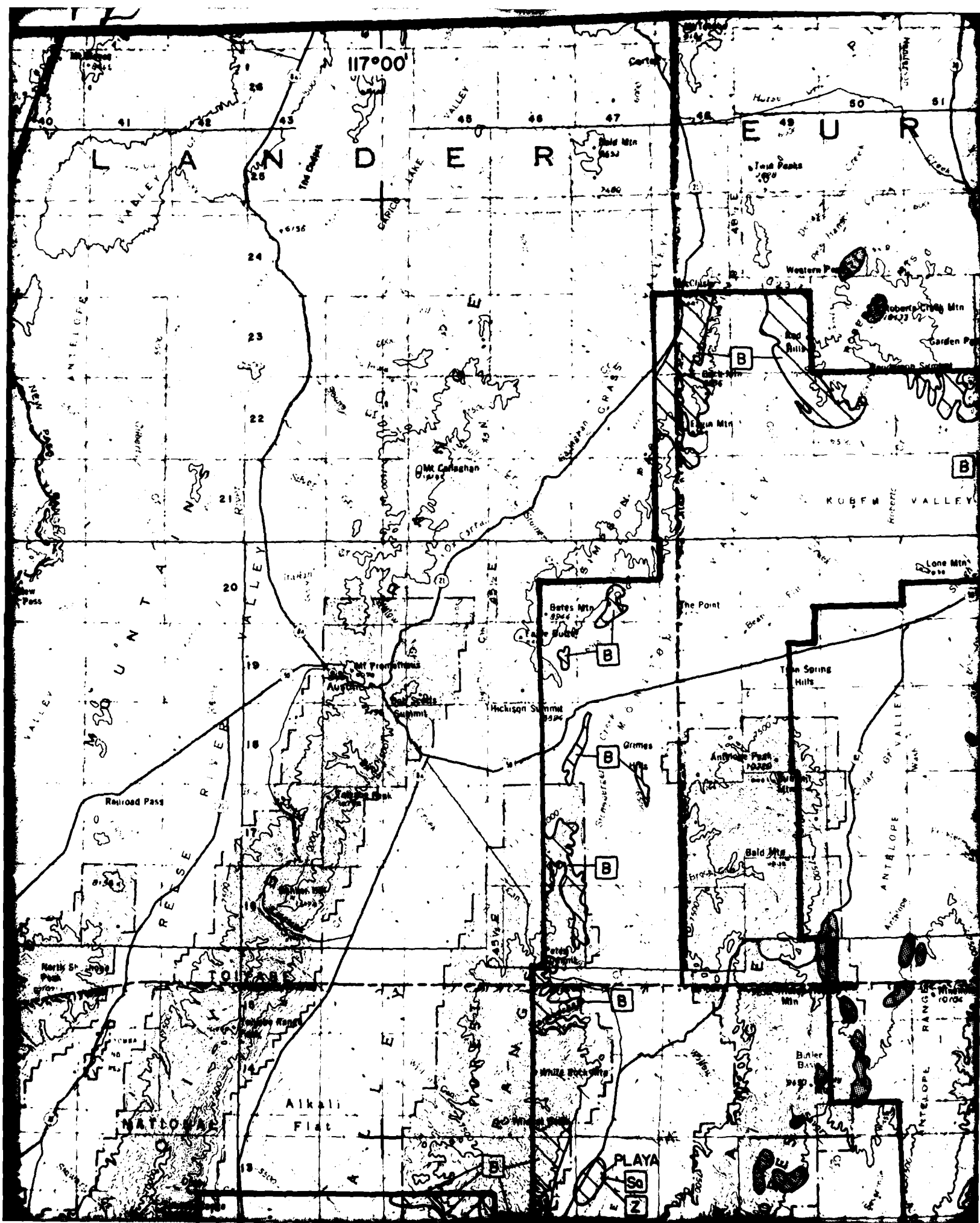
## BASE / FERROUS METALS POTENTIAL MAP

30 APR 81

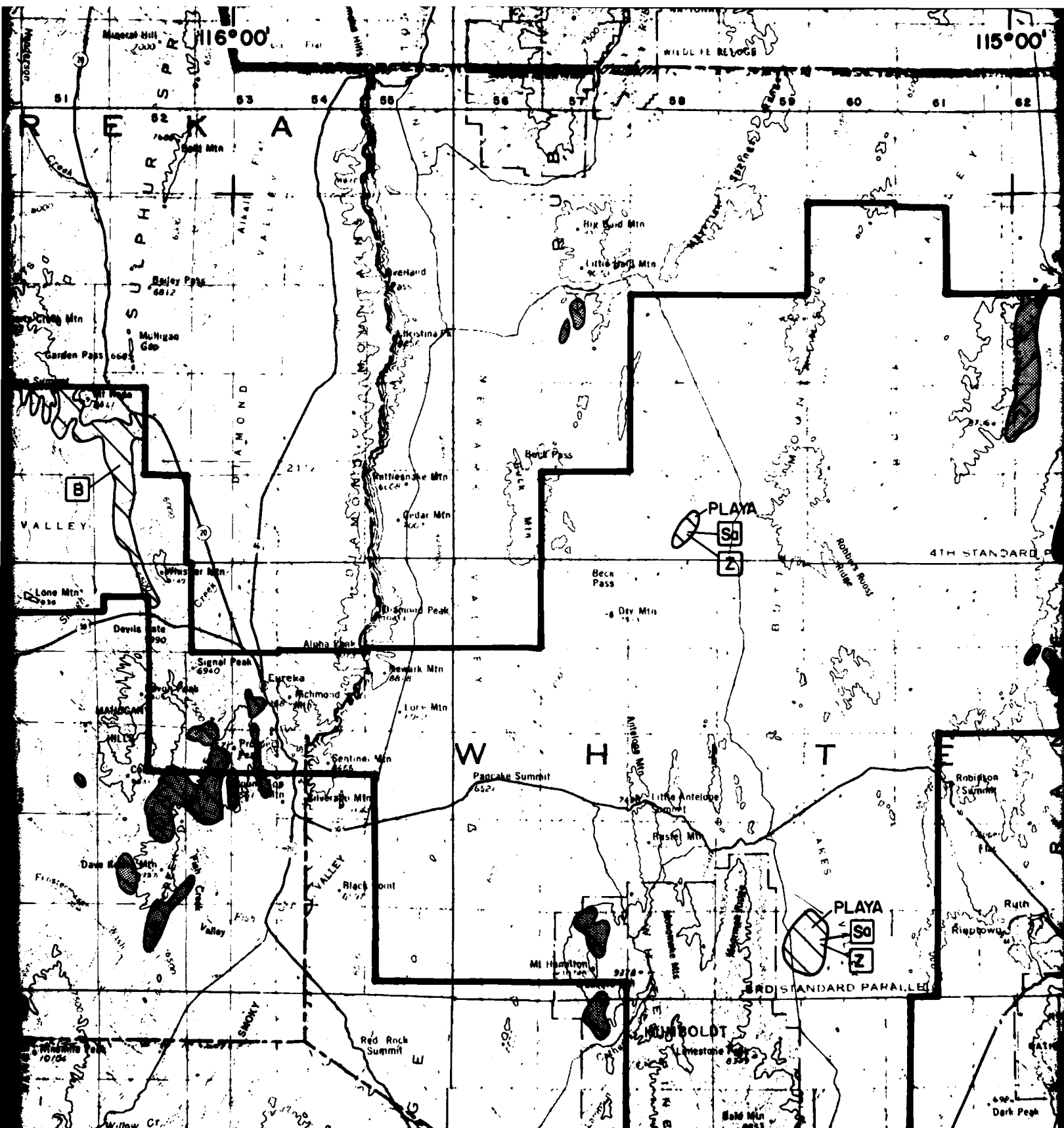
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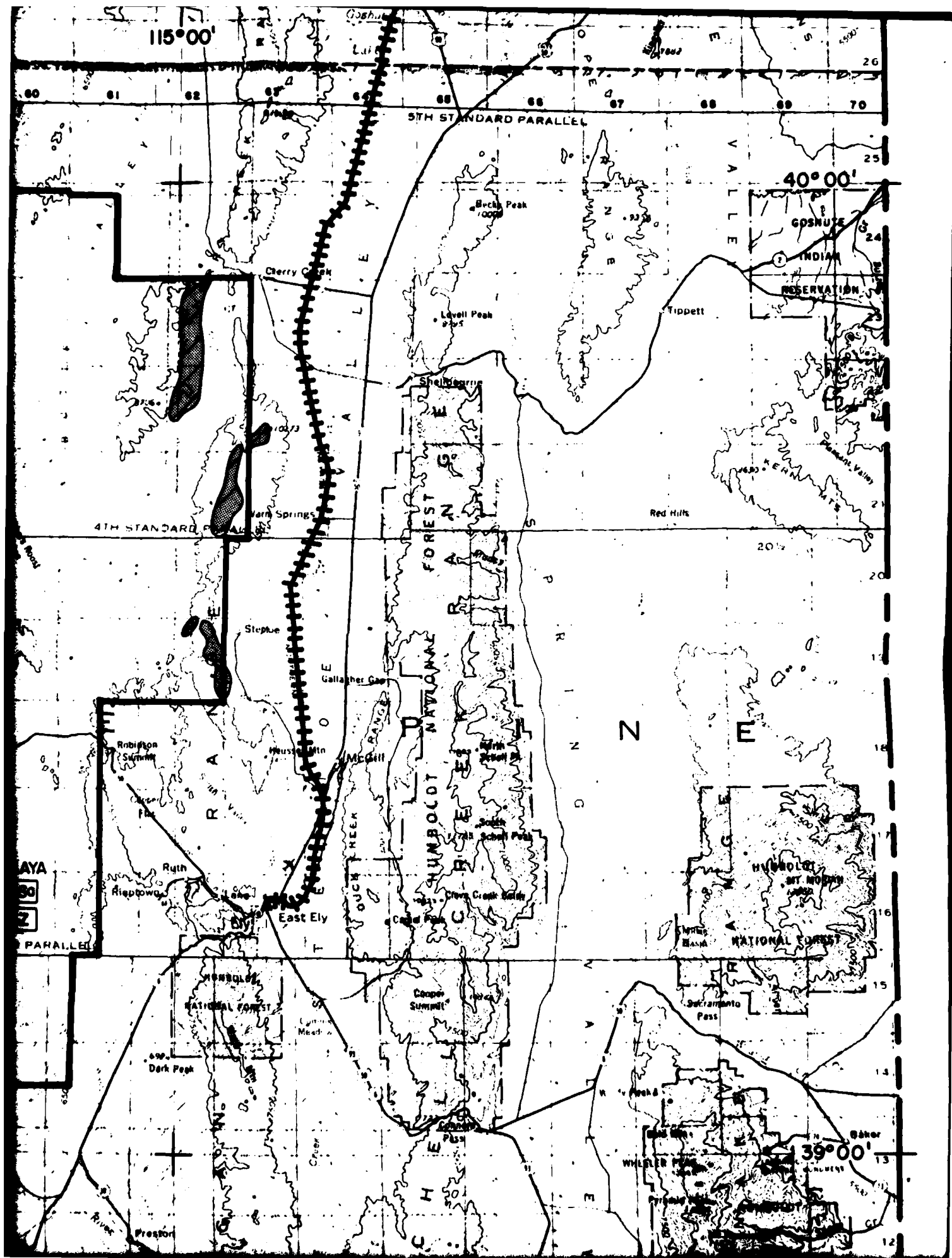
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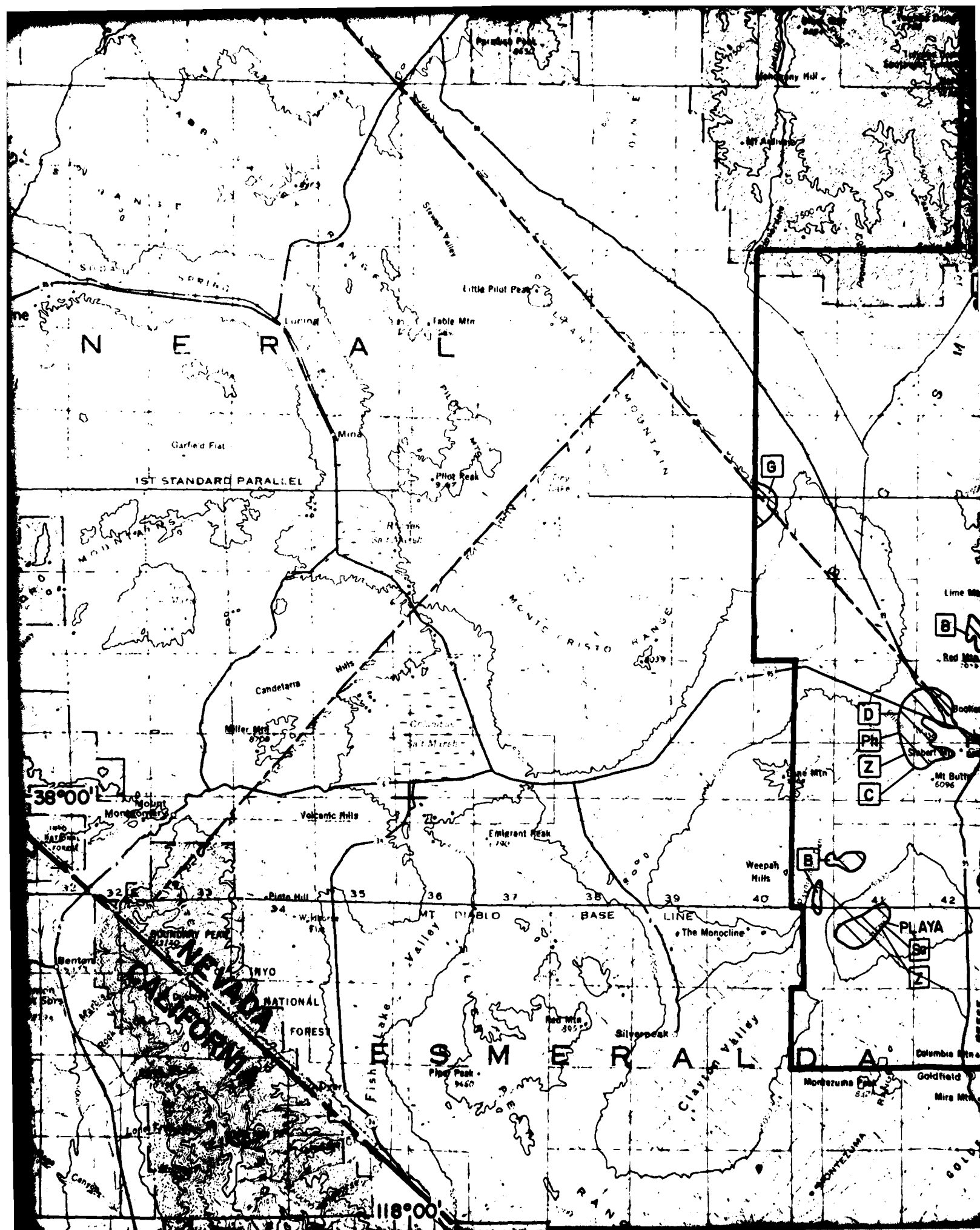


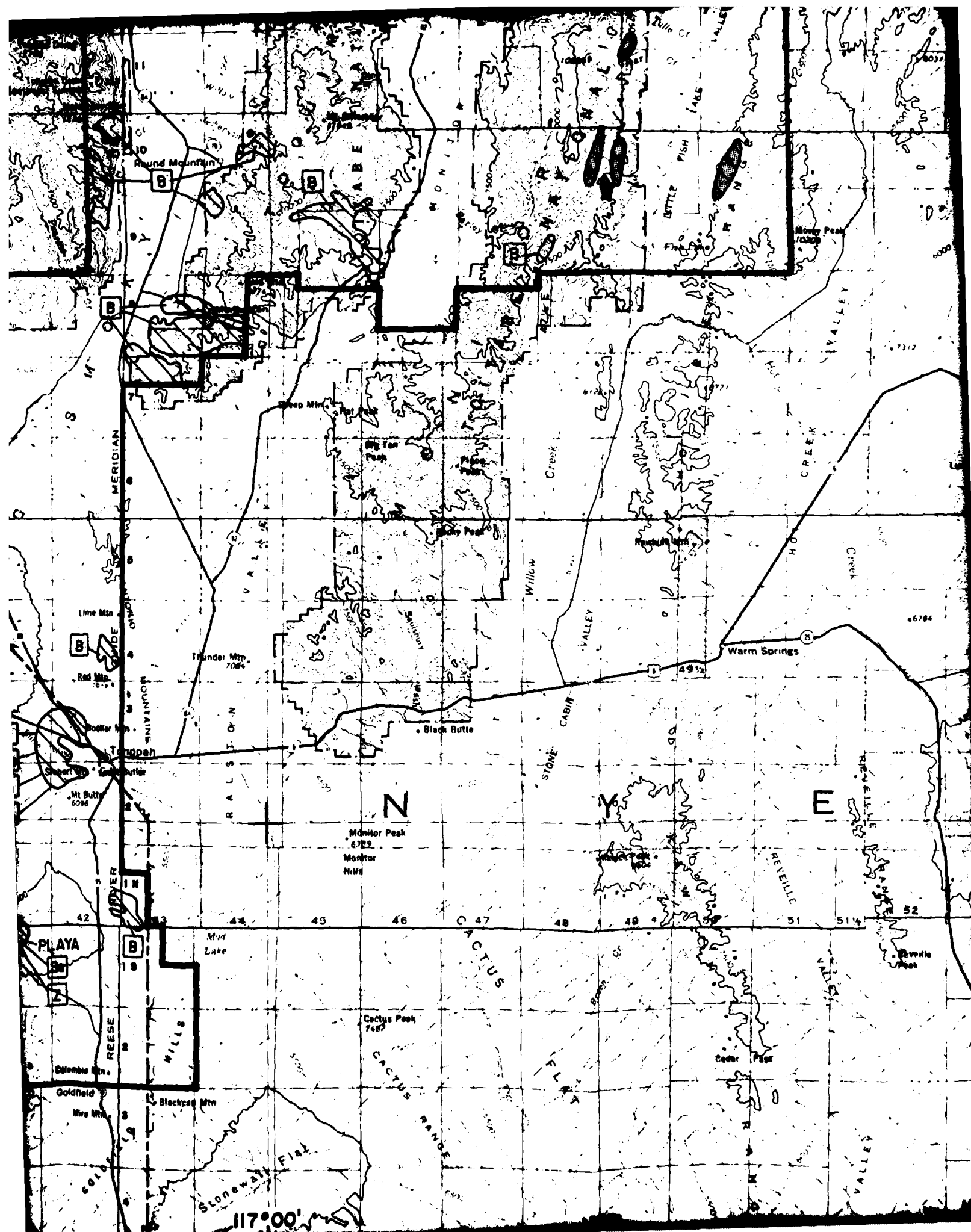


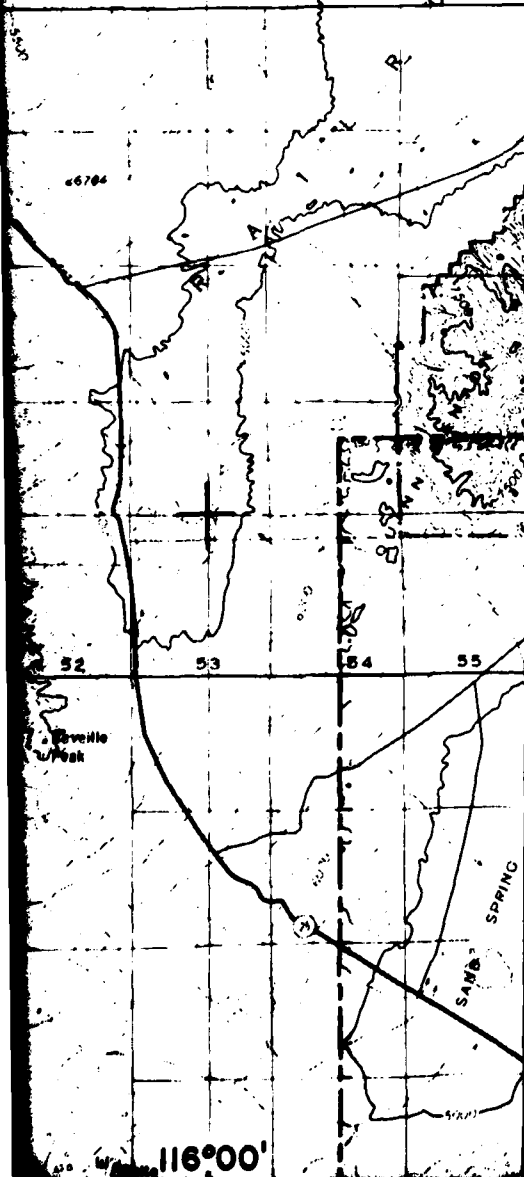
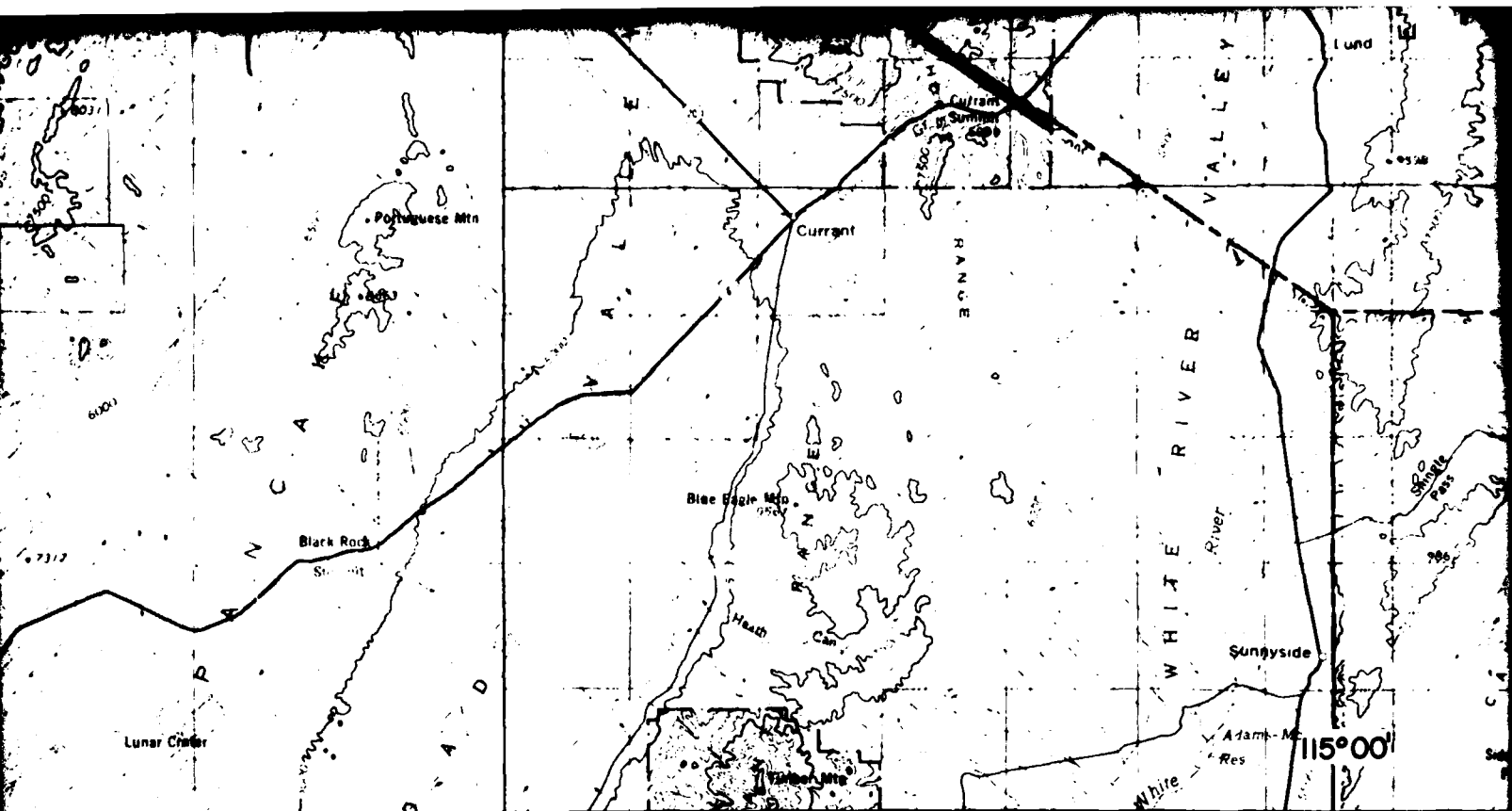












**[B]** BARITE

**[C]** CLAY

**[D]** DIATOMITE

**[G]** GEMS

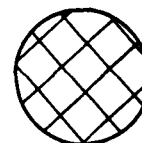
**[Ph]** PHOSPHATE

**[Sa]** SALINES

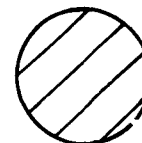
**[Z]** ZEOLITES

**[●]** SILICA ( FROM KETNER, 1976 )

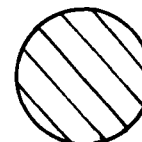
**[+]** RAILROAD



HIGH POTENTIAL



GOOD POTENTIAL



SPECULATIVE POTENTIAL



MX ADDITIONAL STUDY AREA

1 25 OCT 1979

2 27 FEB 1980

3 20 JUN 1980

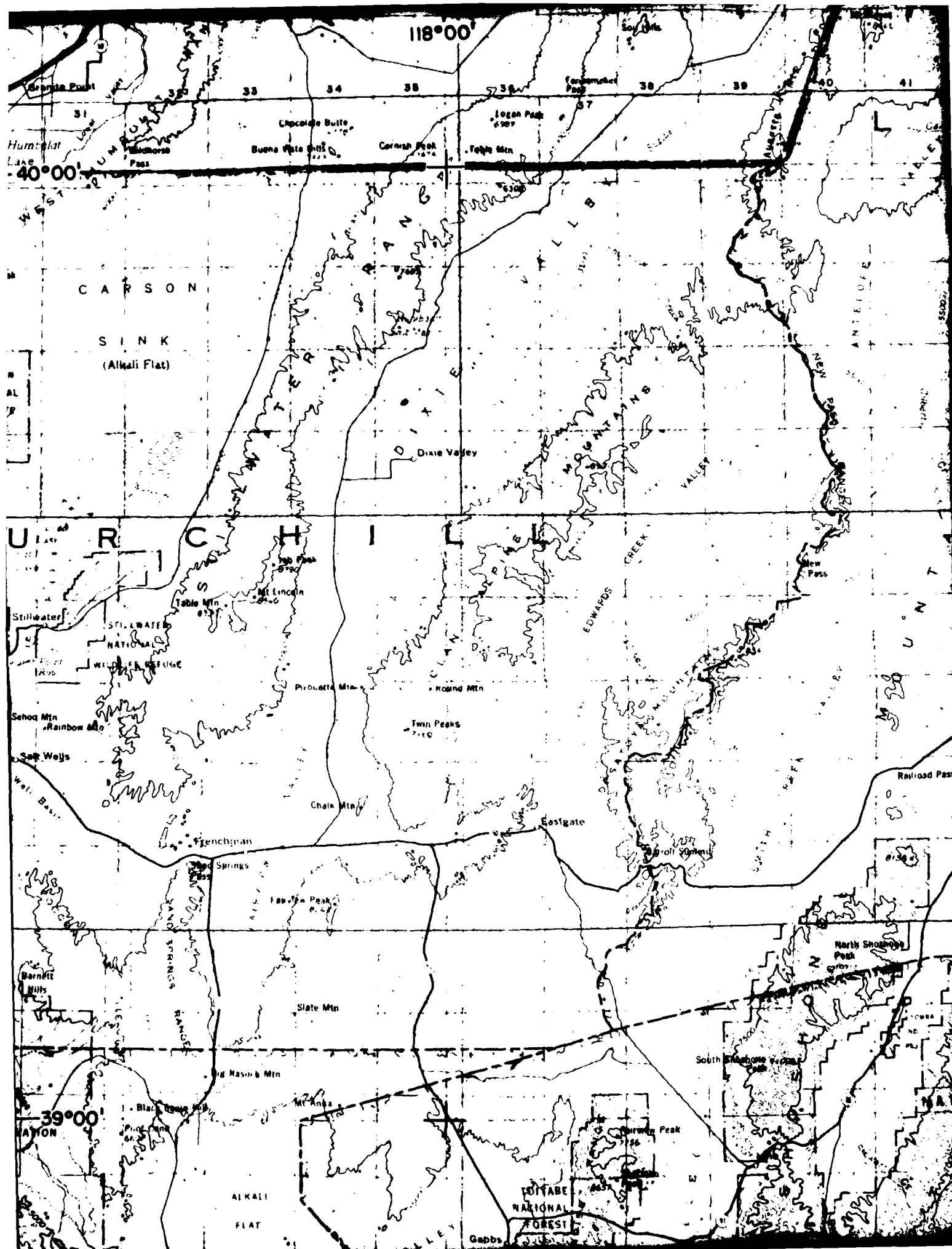
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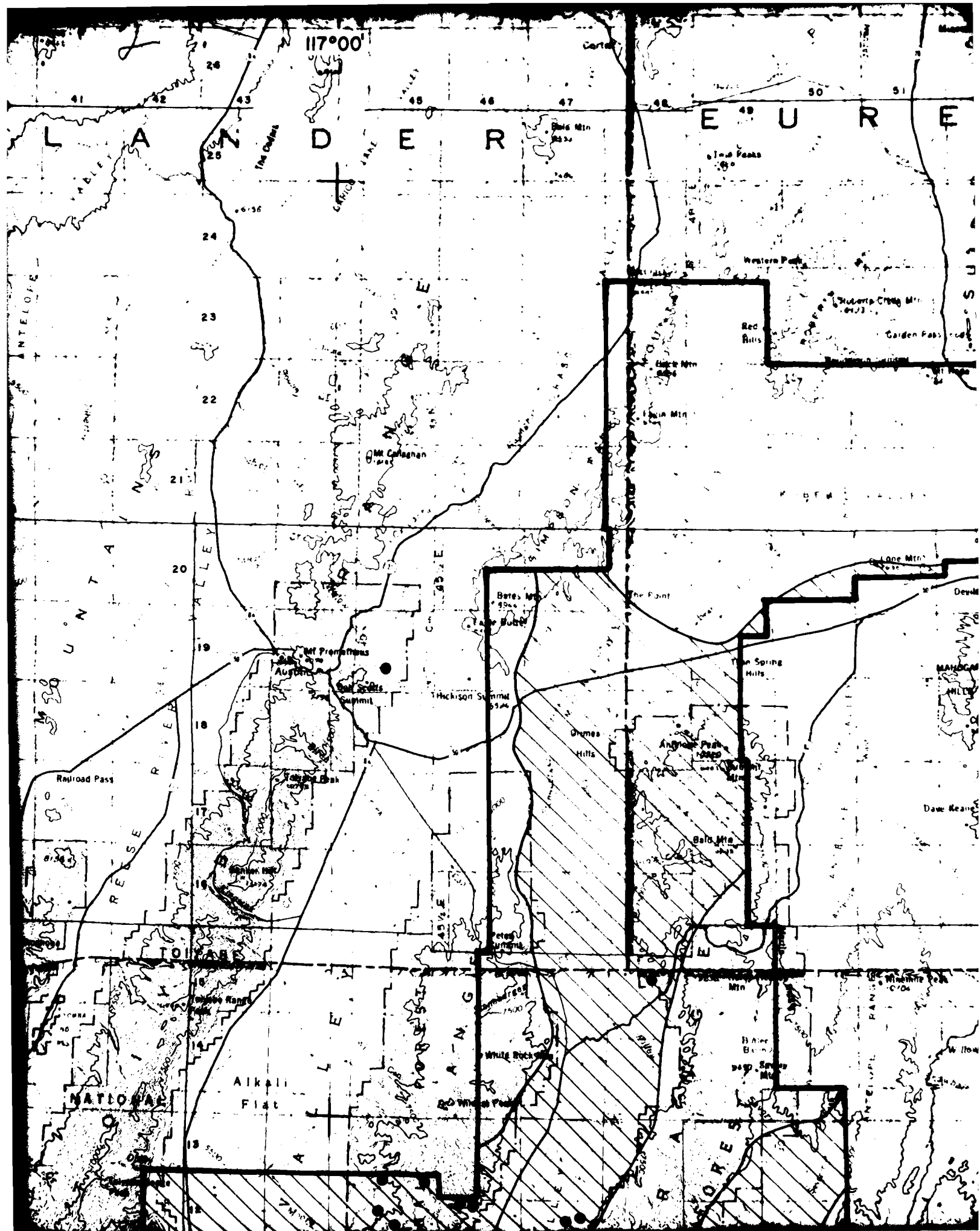
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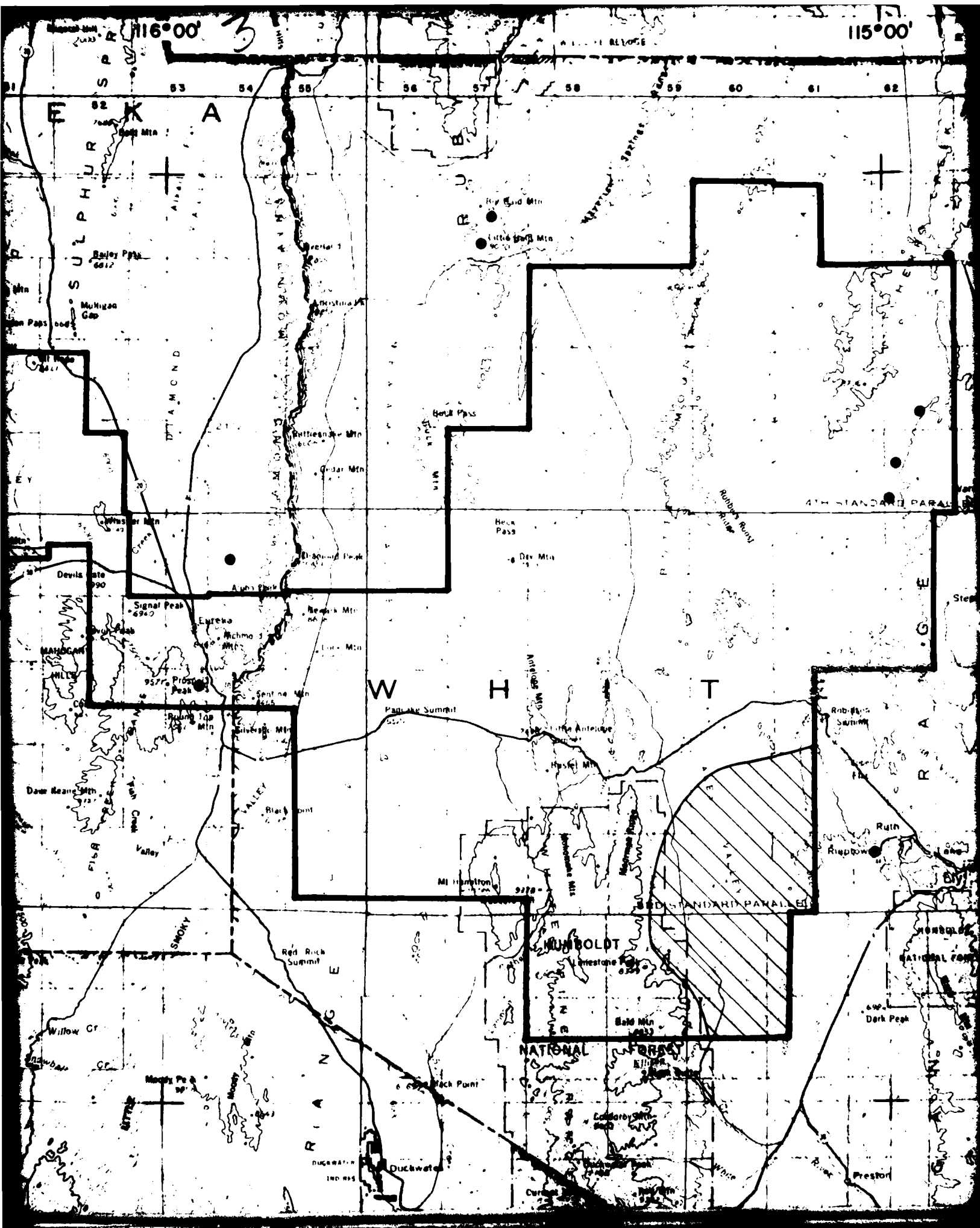
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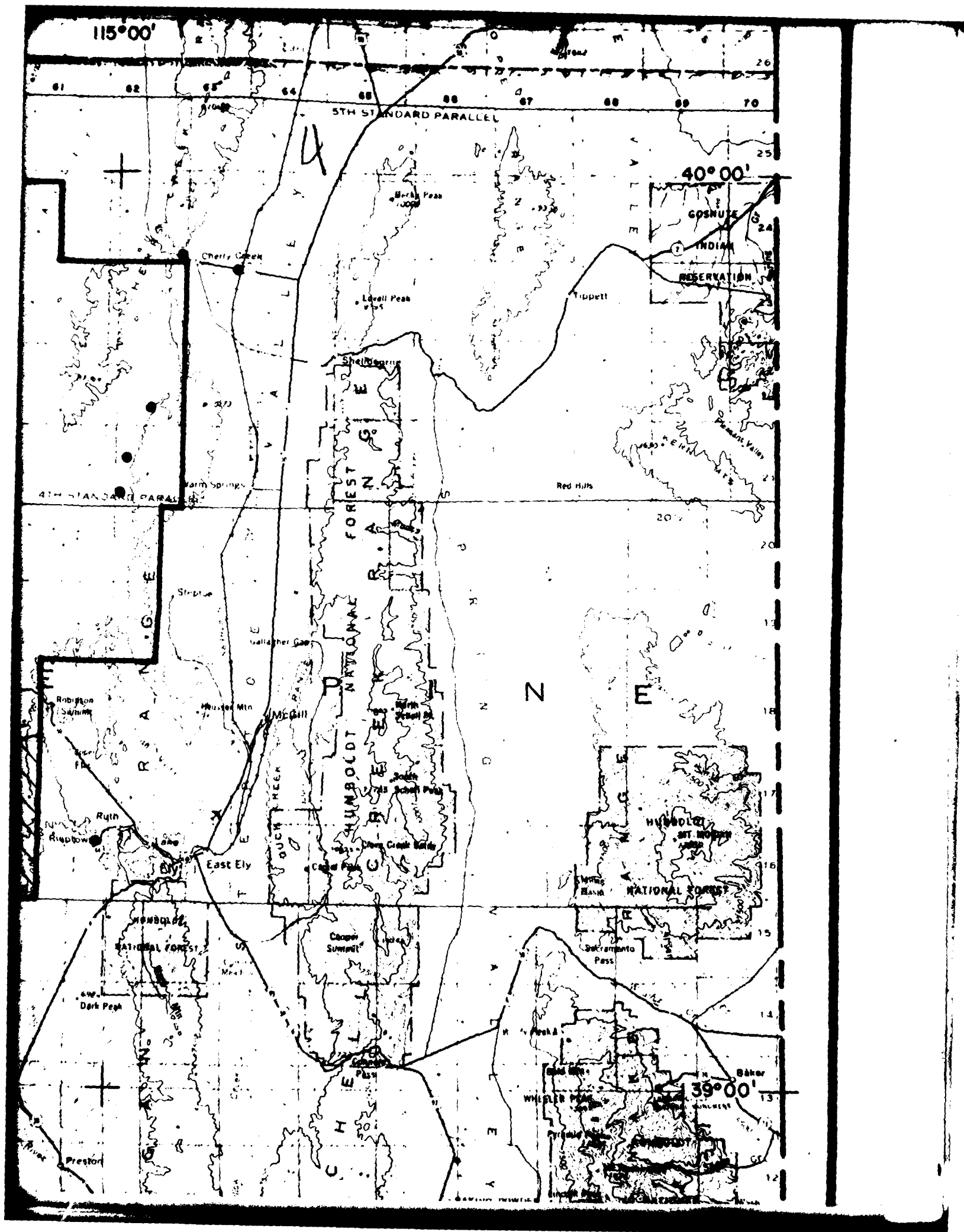


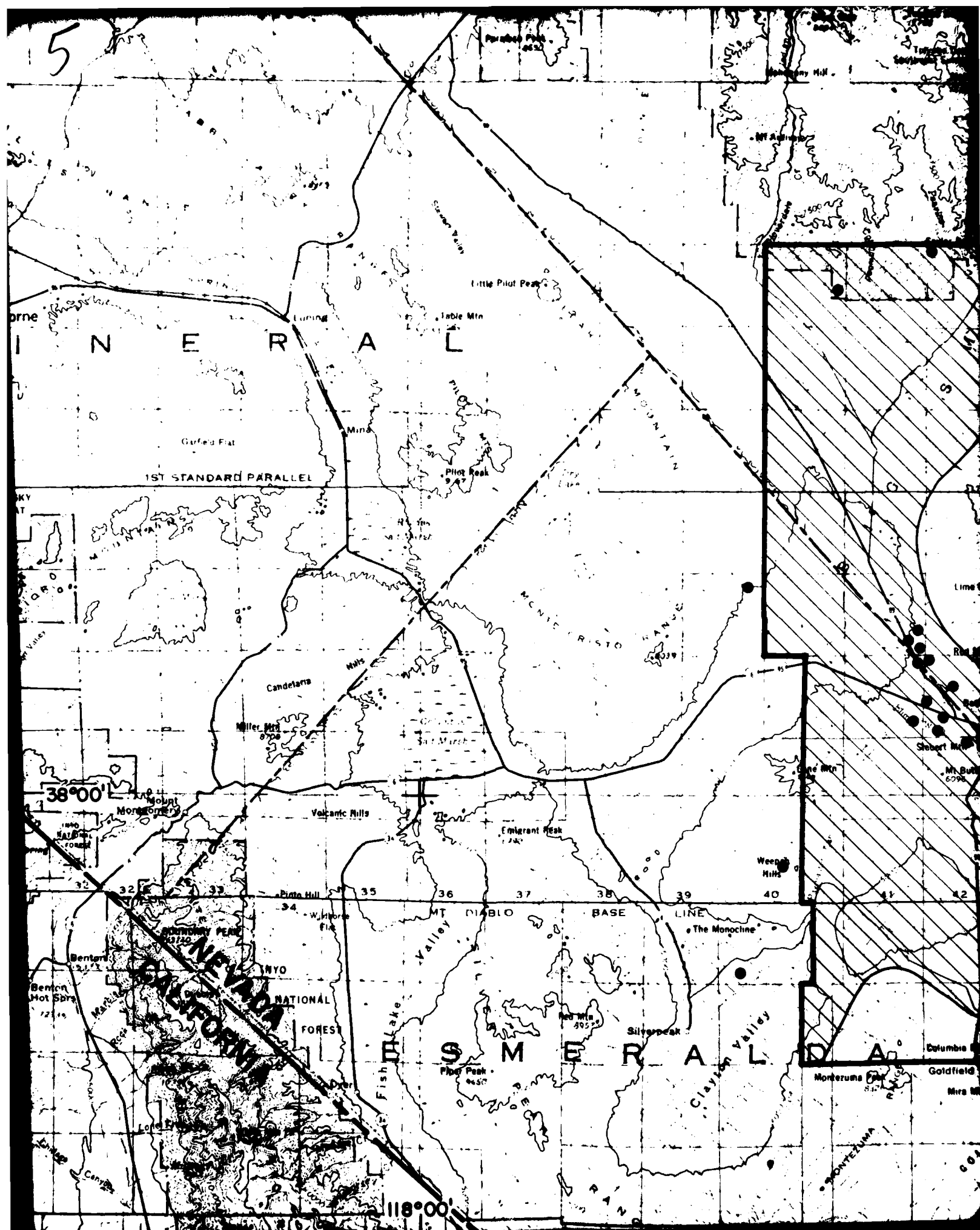


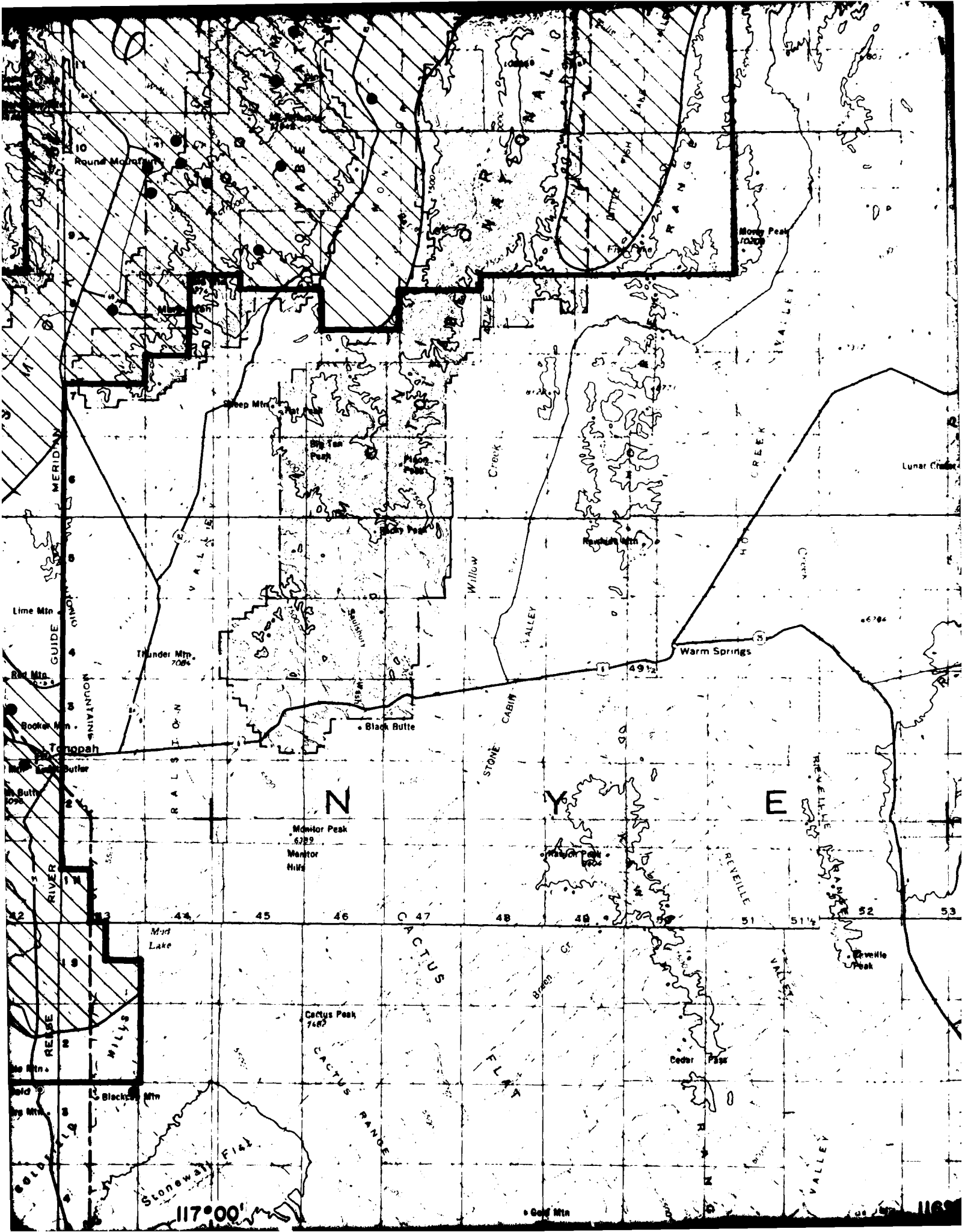


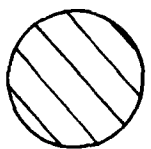
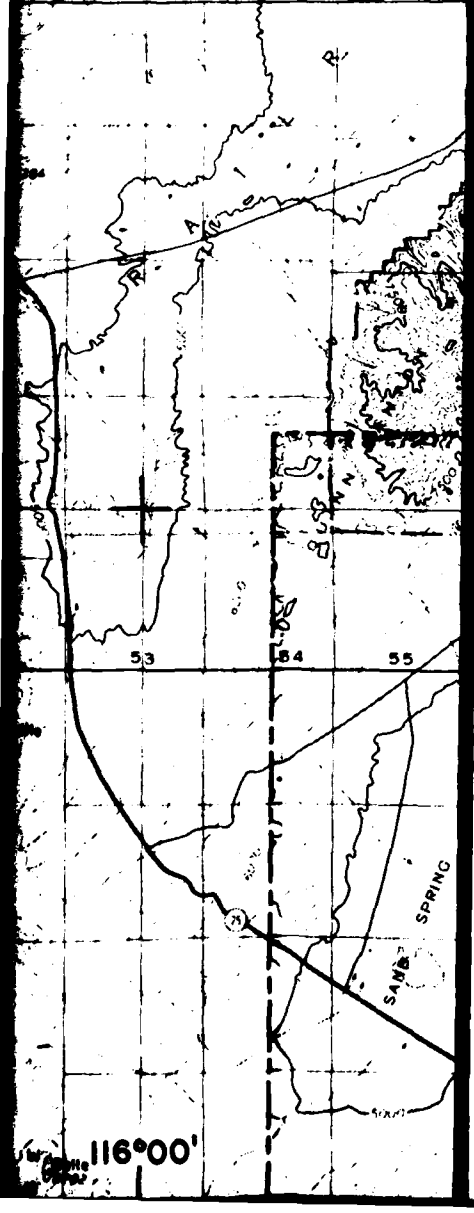
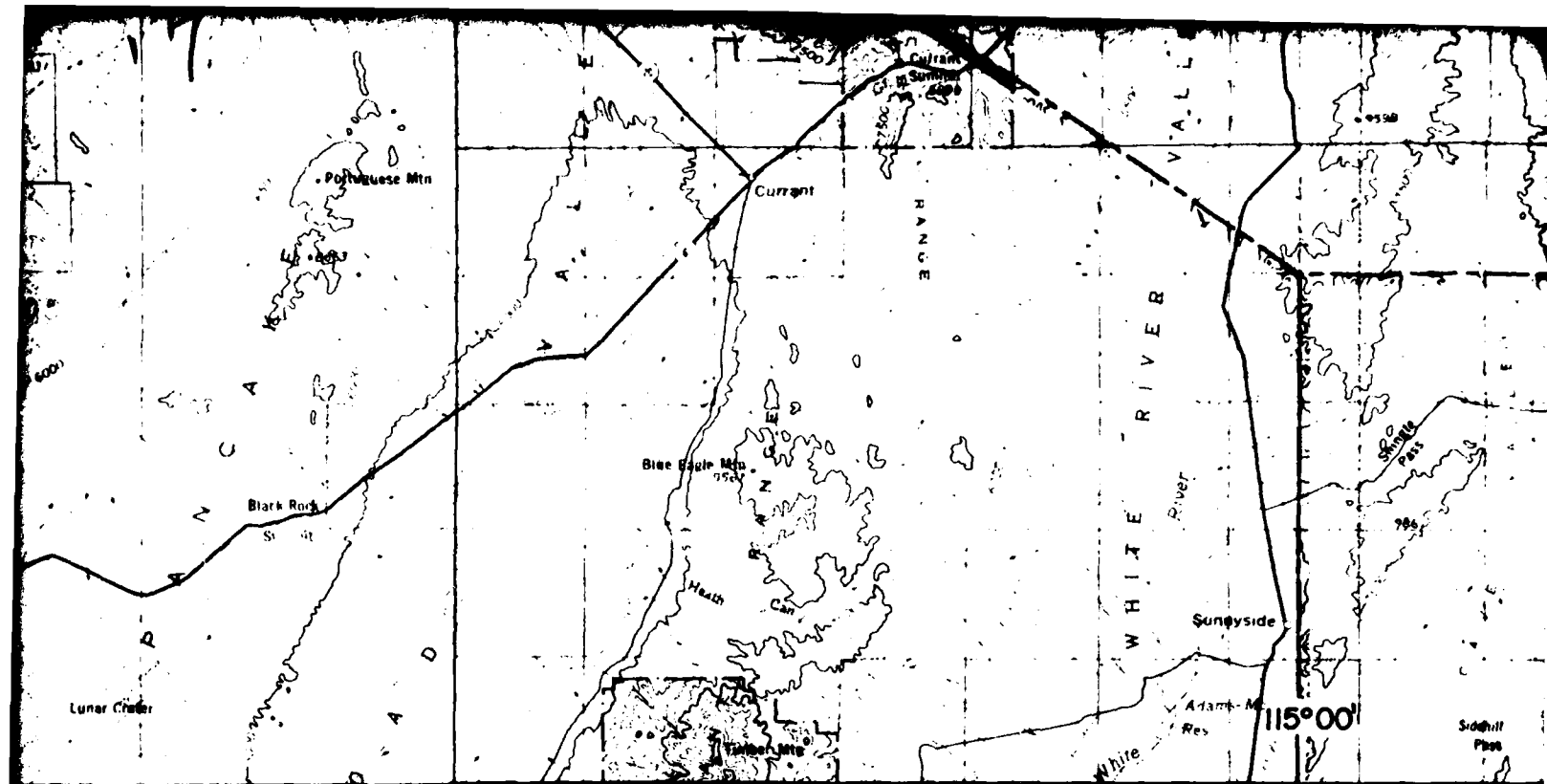












SPECULATIVE POTENTIAL



URANIUM OR RADIOACTIVE  
OCCURRENCE OR OCCURRENCES

SCALE 1: 500,000



STATUTE MILES

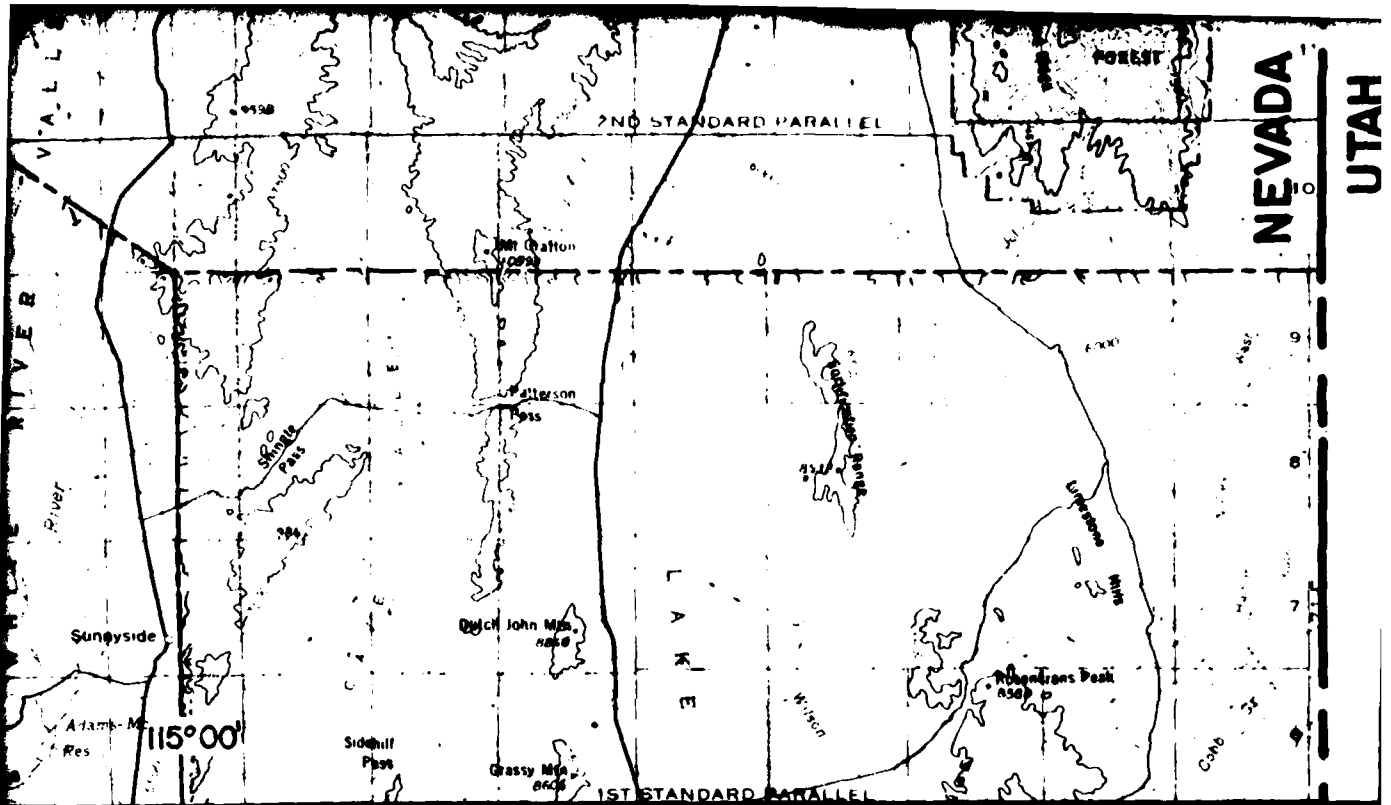


KILOMETERS



MX ADDITIONAL  
STUDY AREA

- 1 25 OCT 1979
- 2 27 FEB 1980
- 3 20 JUN 1980
- 4 \_\_\_\_\_
- 5 \_\_\_\_\_
- 6 \_\_\_\_\_
- 7 \_\_\_\_\_



#### REFERENCES

LARSON AND OTHERS, 1977 a AND b  
 COHENOUR, 1980 b  
 GARSIDE, 1973

REFERENCES



MX ADDITIONAL VALLEY MINERAL RESOURCES SURVEY  
 STUDY AREA BOUNDARY SEPT. 26, 1980

1 25 OCT 1979

2 27 FEB 1980

3 20 JUN 1980

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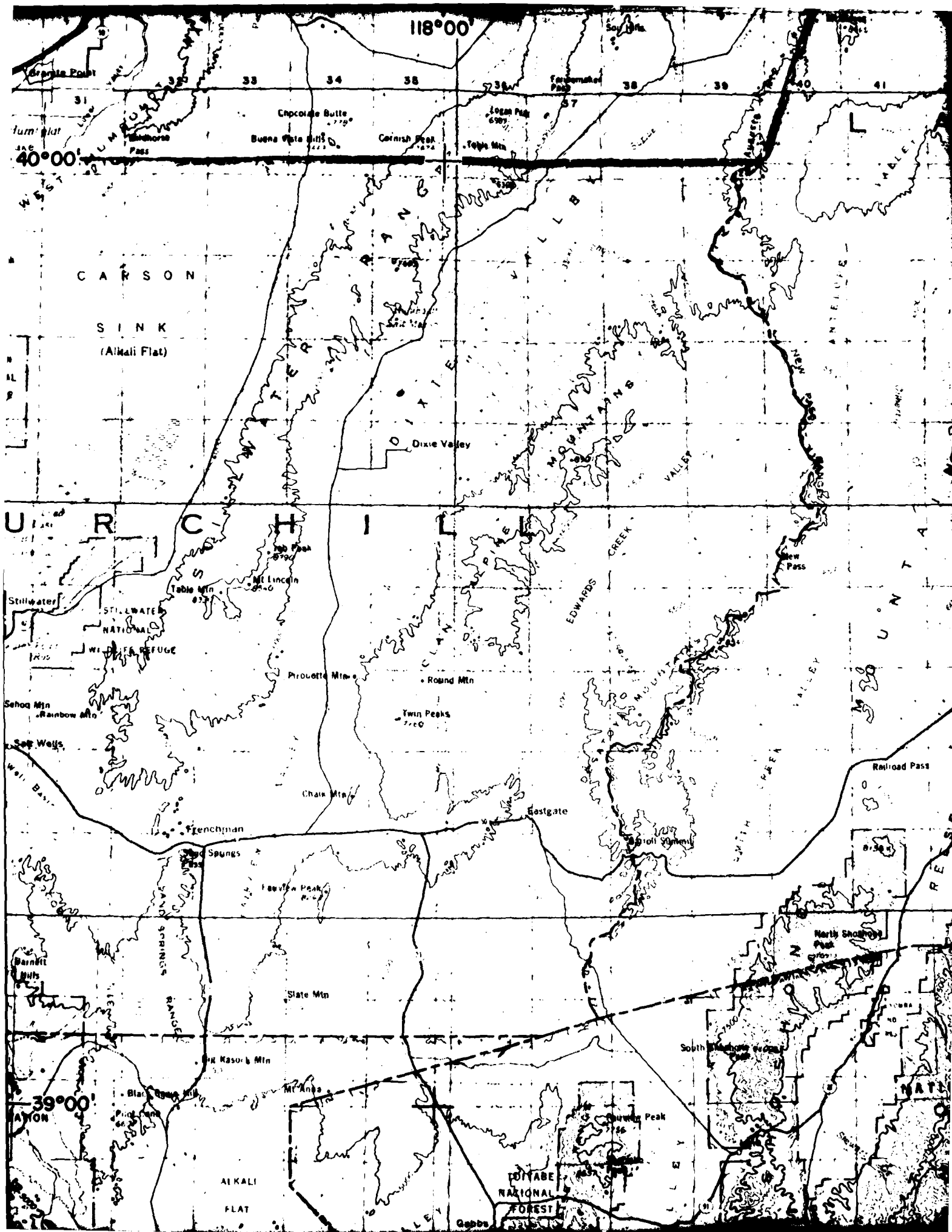
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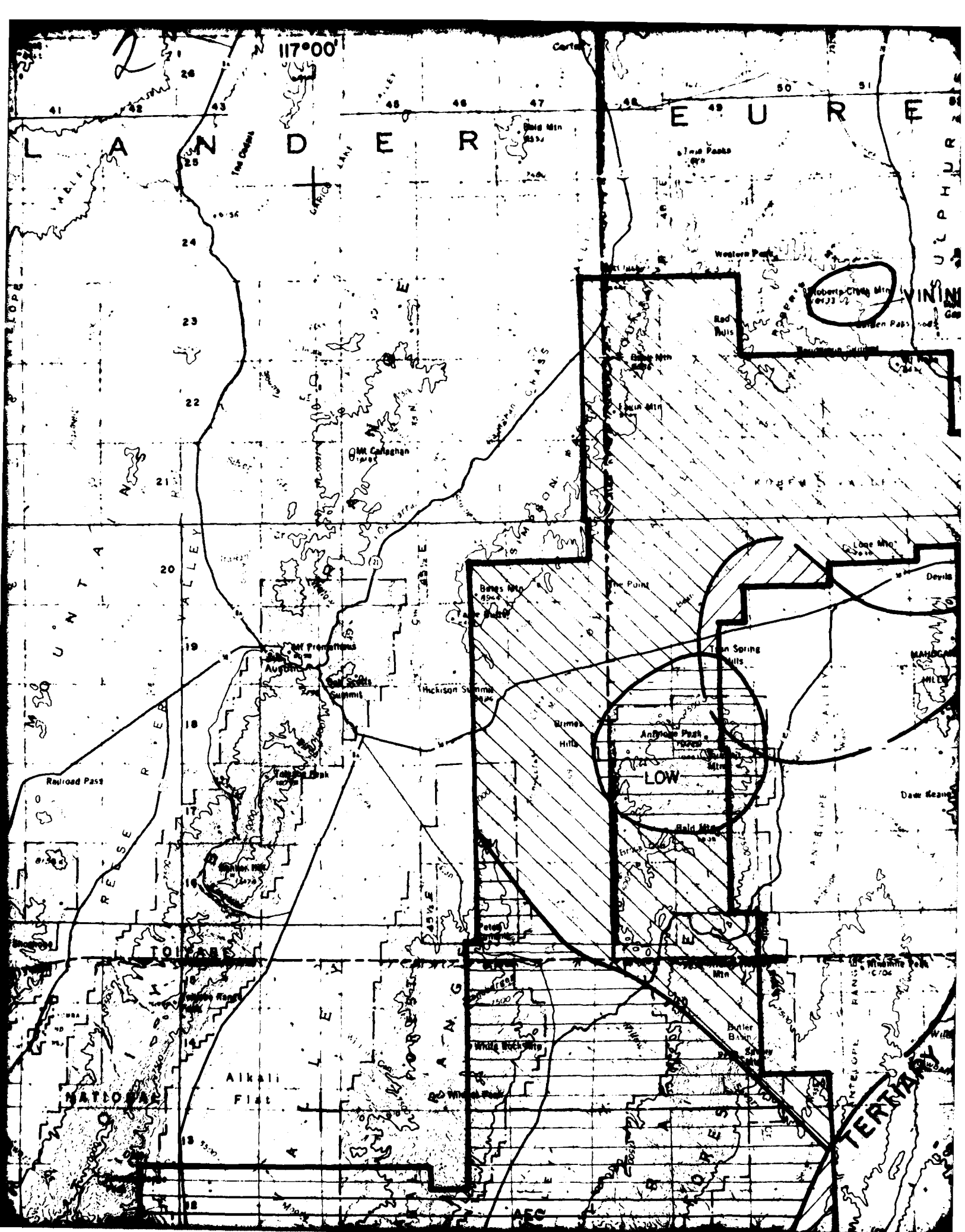
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## URANIUM POTENTIAL MAP

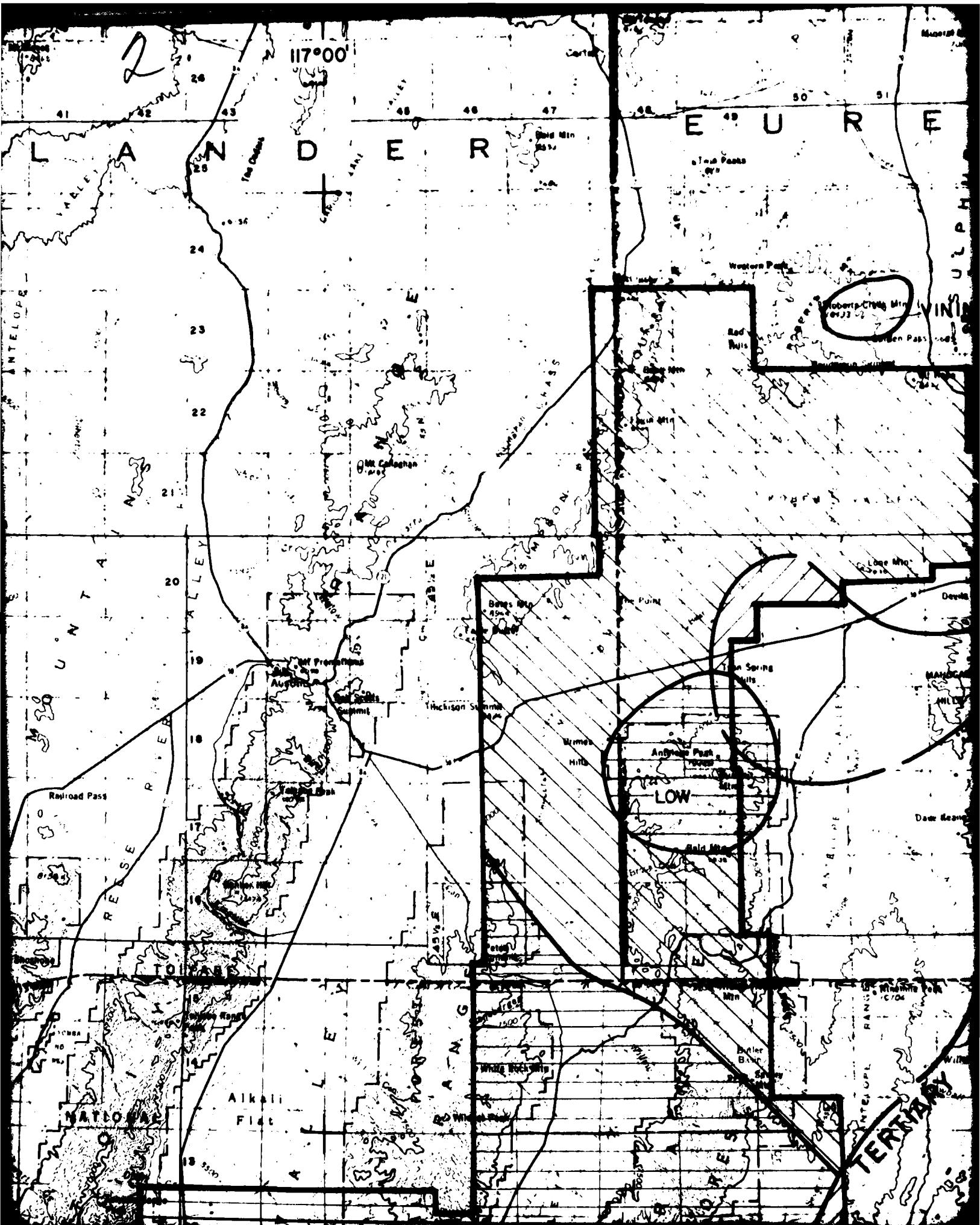
30 APR 81

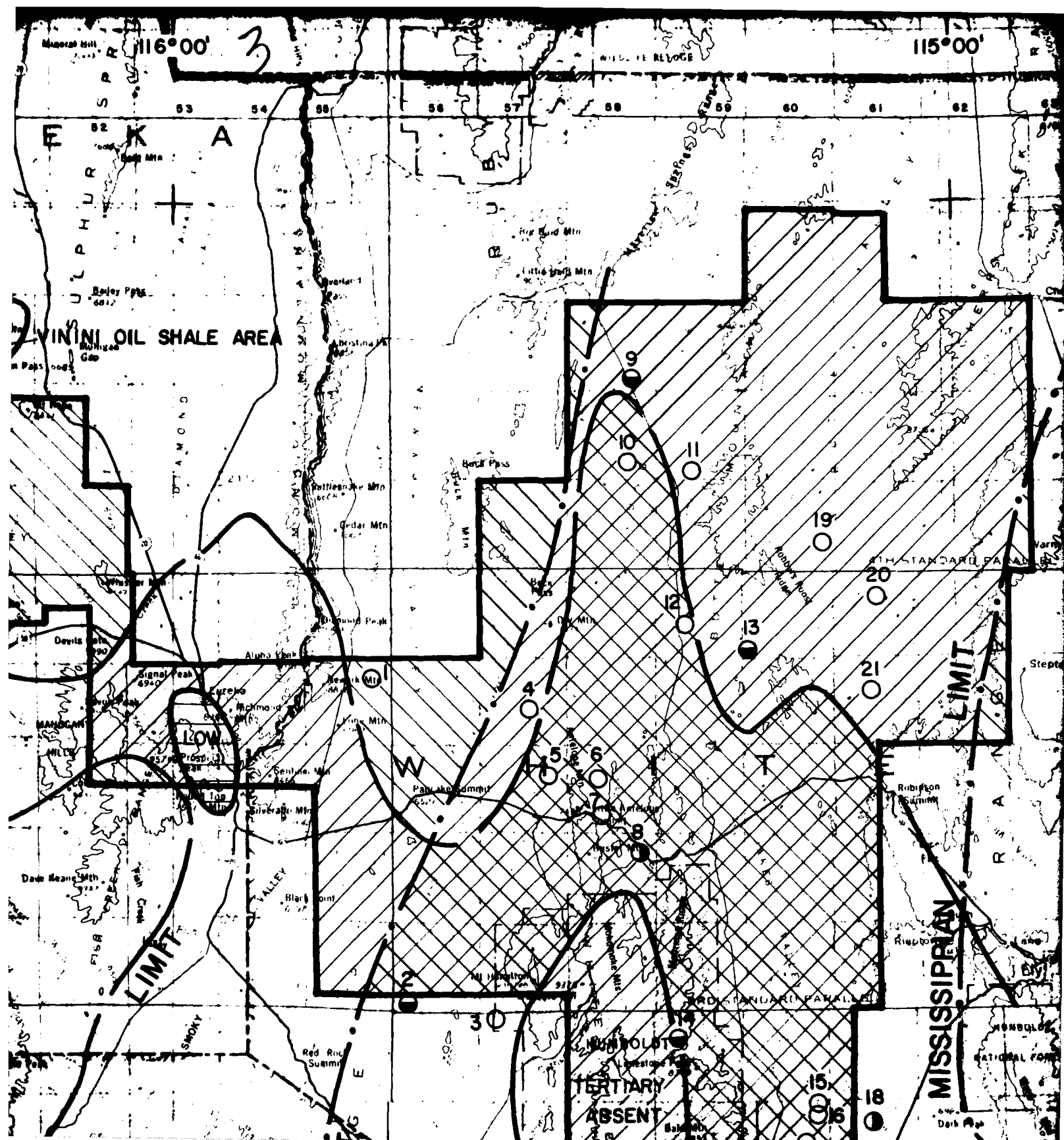
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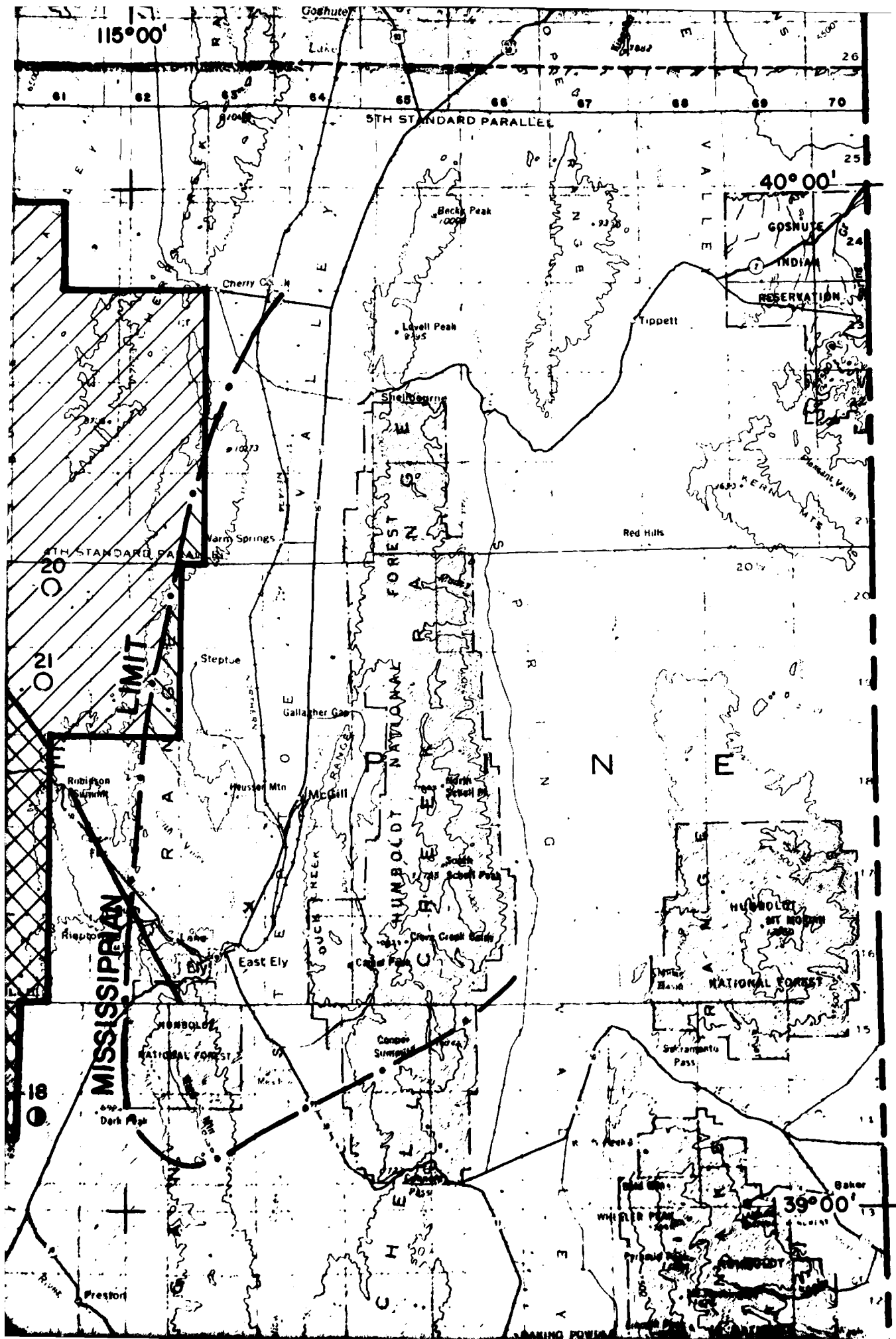


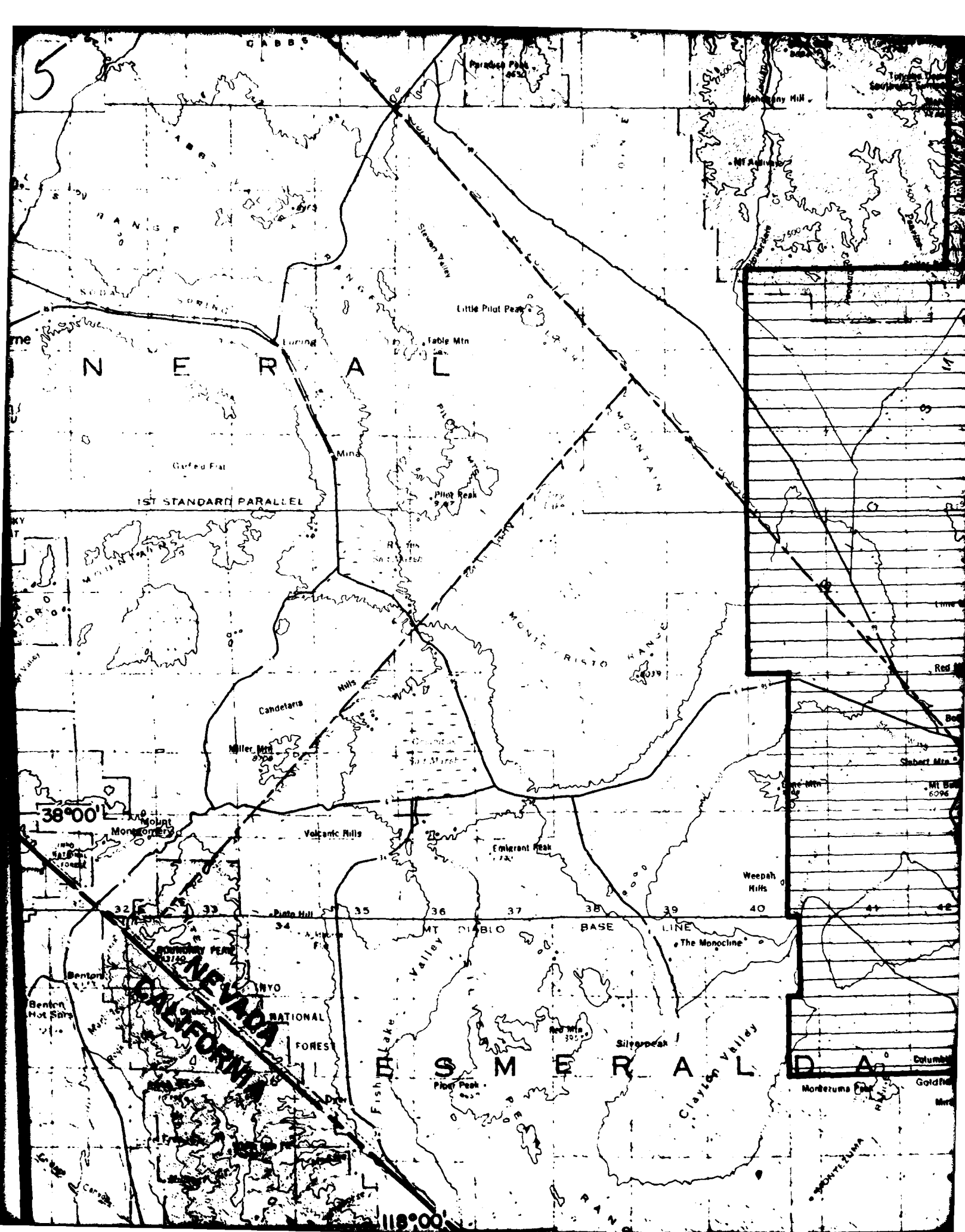


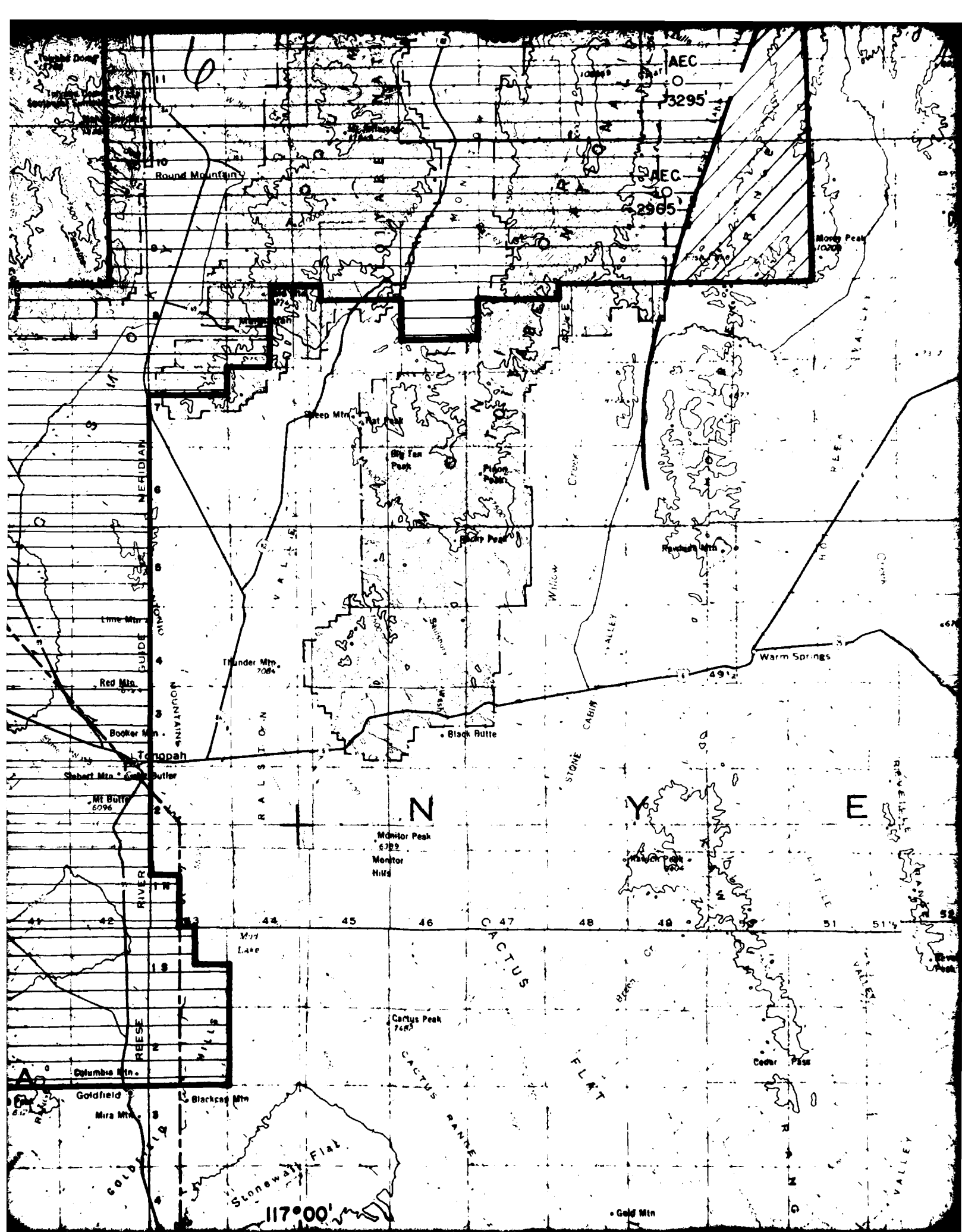


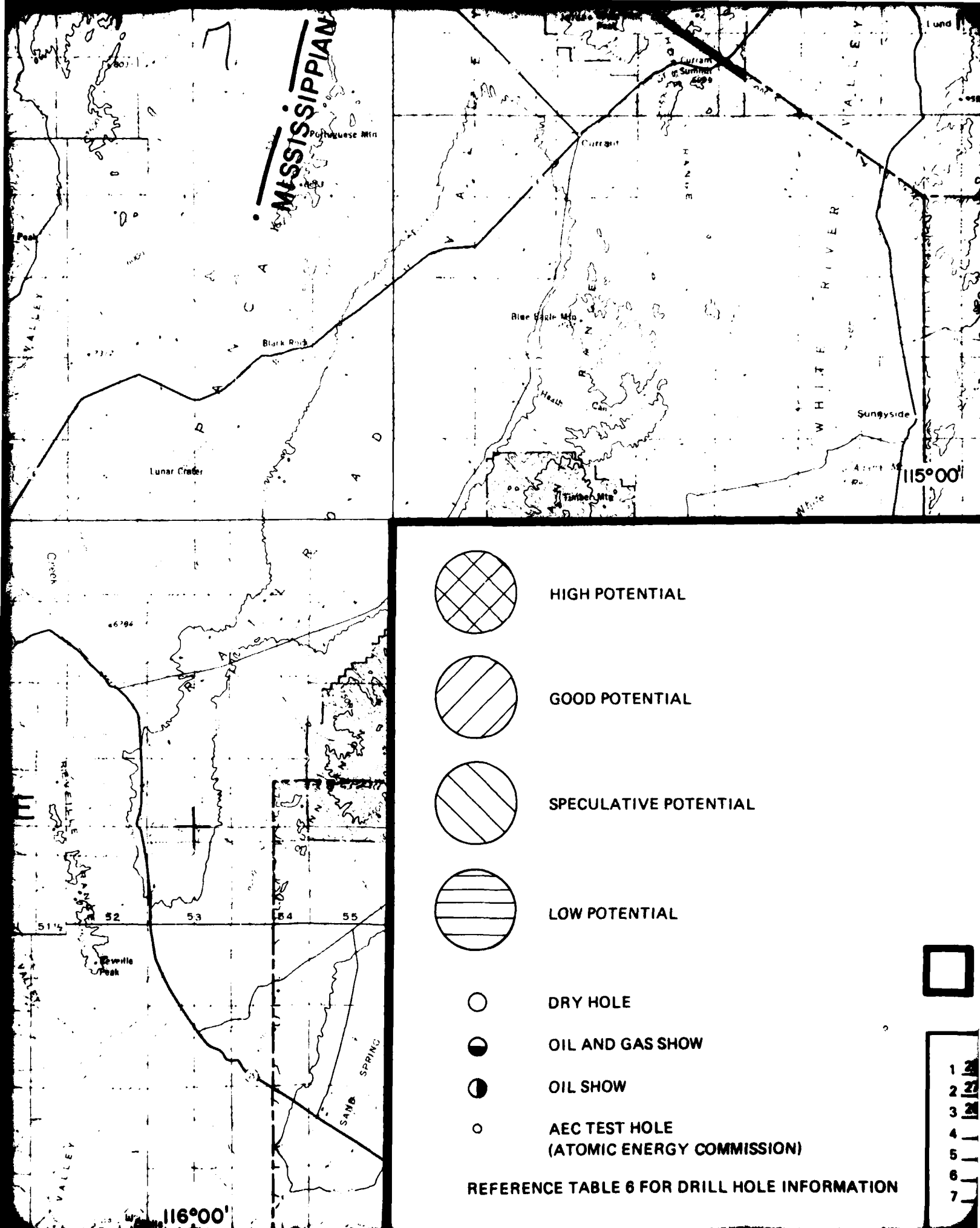


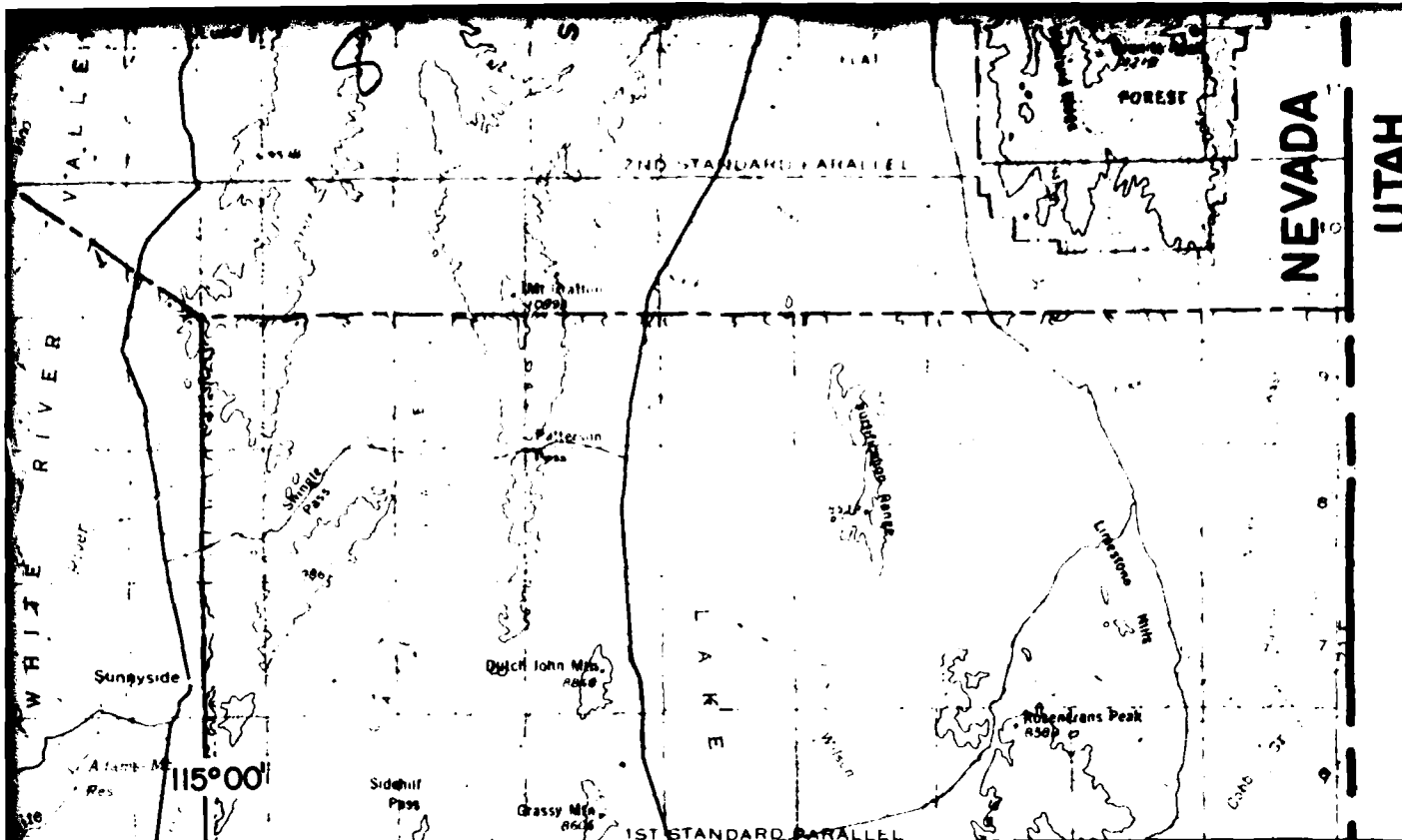












#### REFERENCES

GARSDALE AND OTHER, 1977  
 GARSDALE AND SCHILLING, 1977  
 TERRASCAN GROUP, LTD., 1978  
 TERRASCAN GROUP, INC., 1979

SCALE 1: 500,000



STATUTE MILES



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MX ADDITIONAL VALLEY MINERAL RESOURCES SURVEY  
 STUDY AREA BOUNDARY SEPT. 26, 1980

1 25 OCT 1979

2 27 FEB 1980

3 20 JUN 1980

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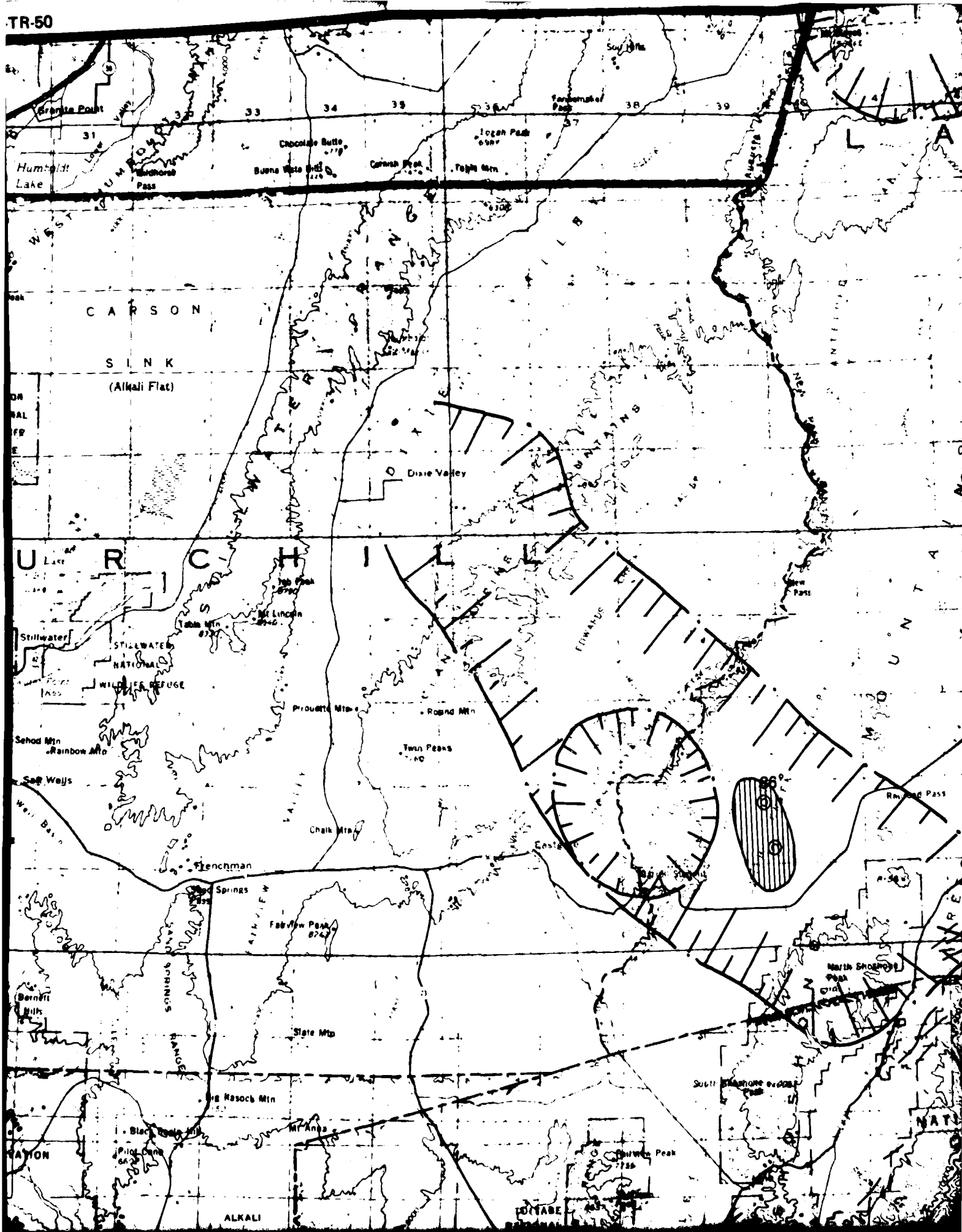
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The Earth Technology Corporation

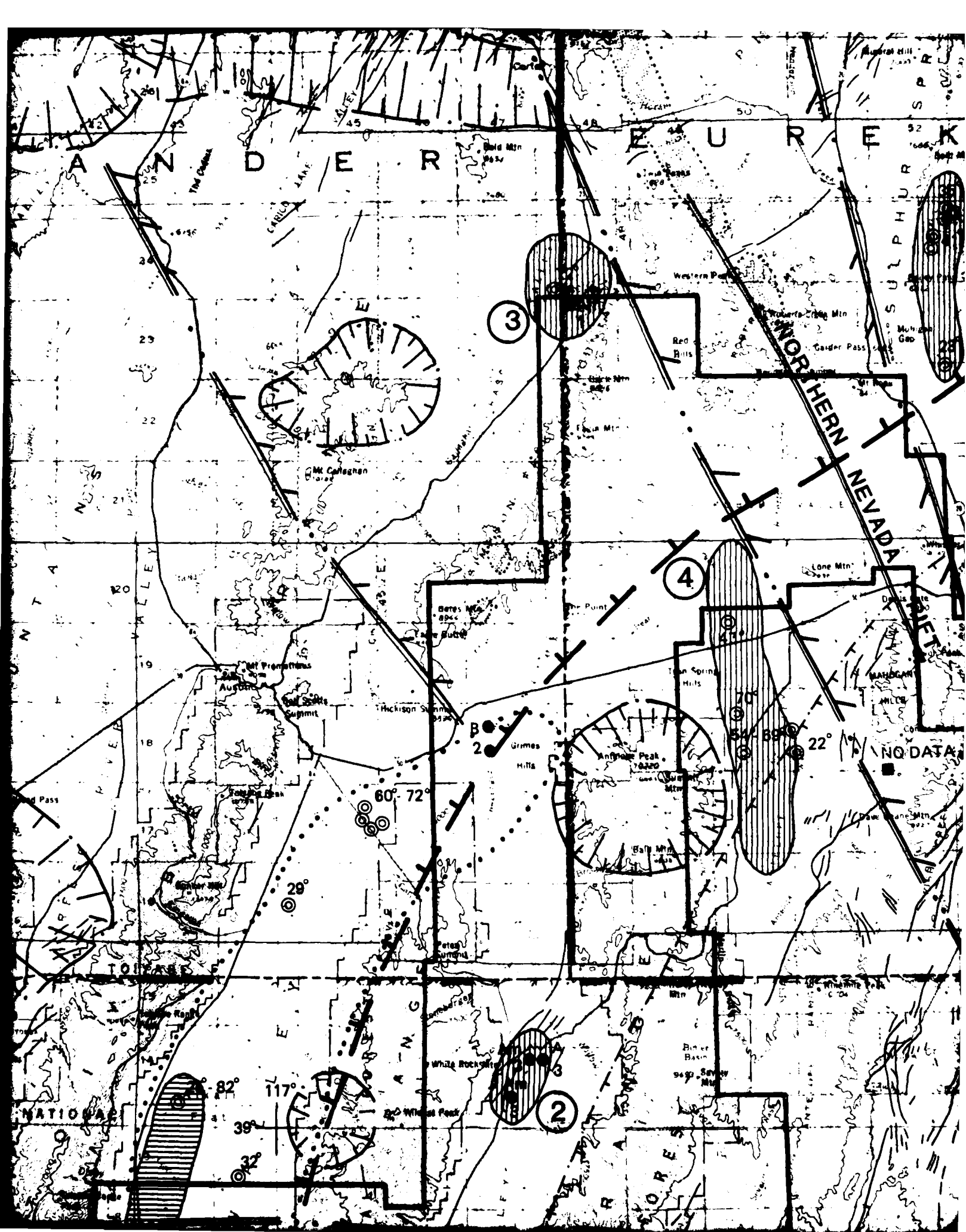
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 DEPARTMENT OF THE AIR FORCE  
 BMO/AFRC-MX

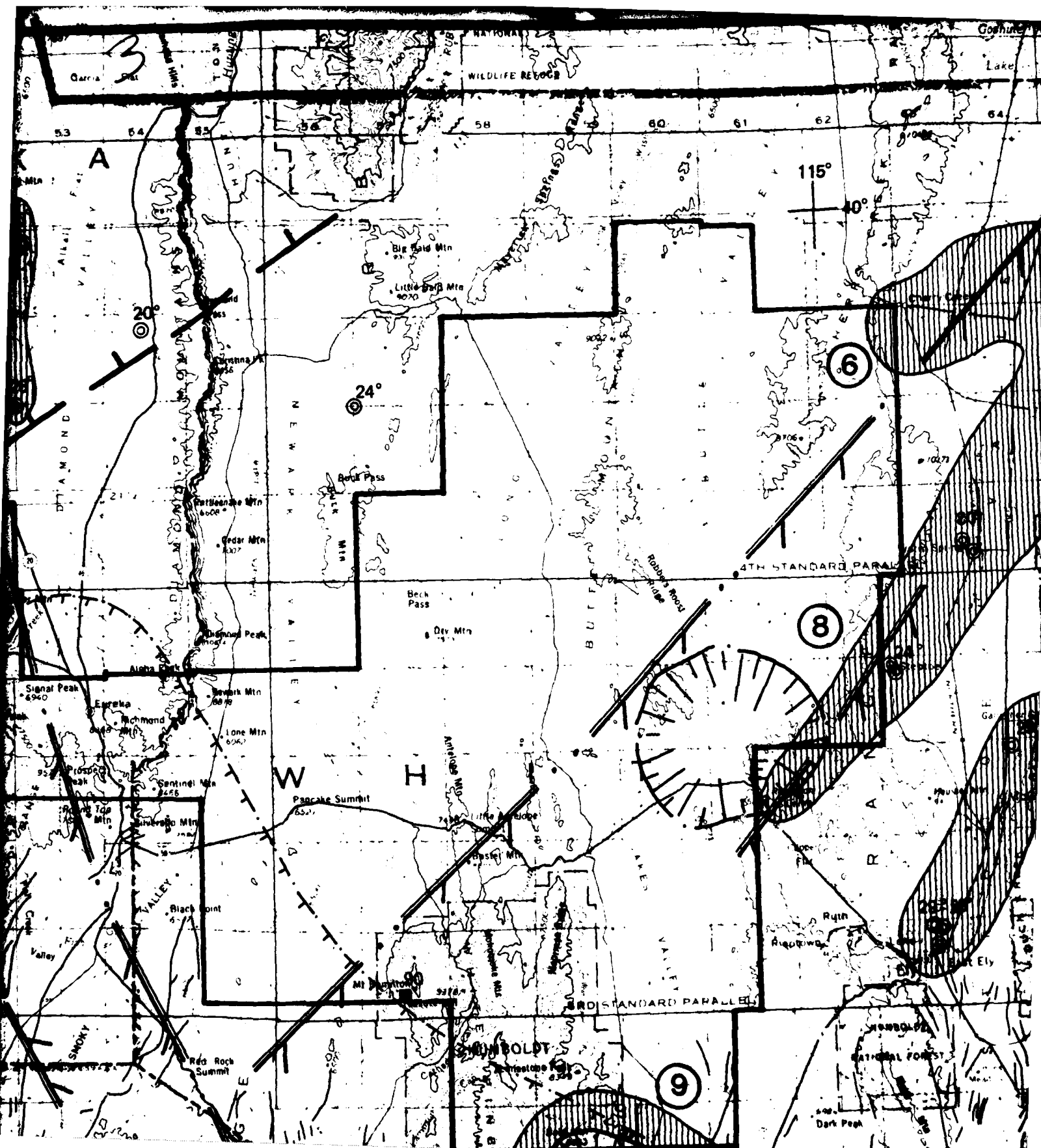
OIL AND GAS POTENTIAL MAP

FORMATION

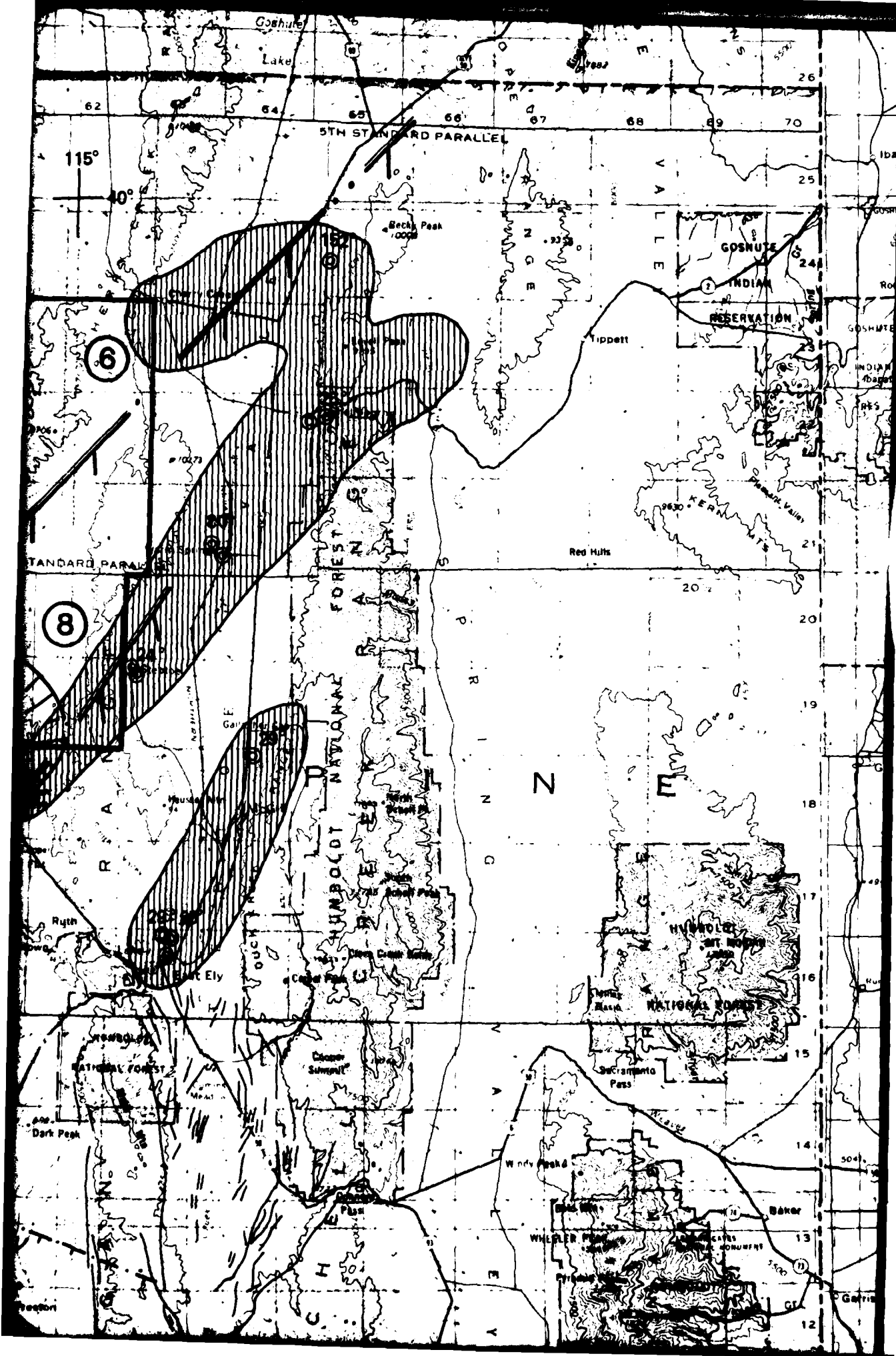


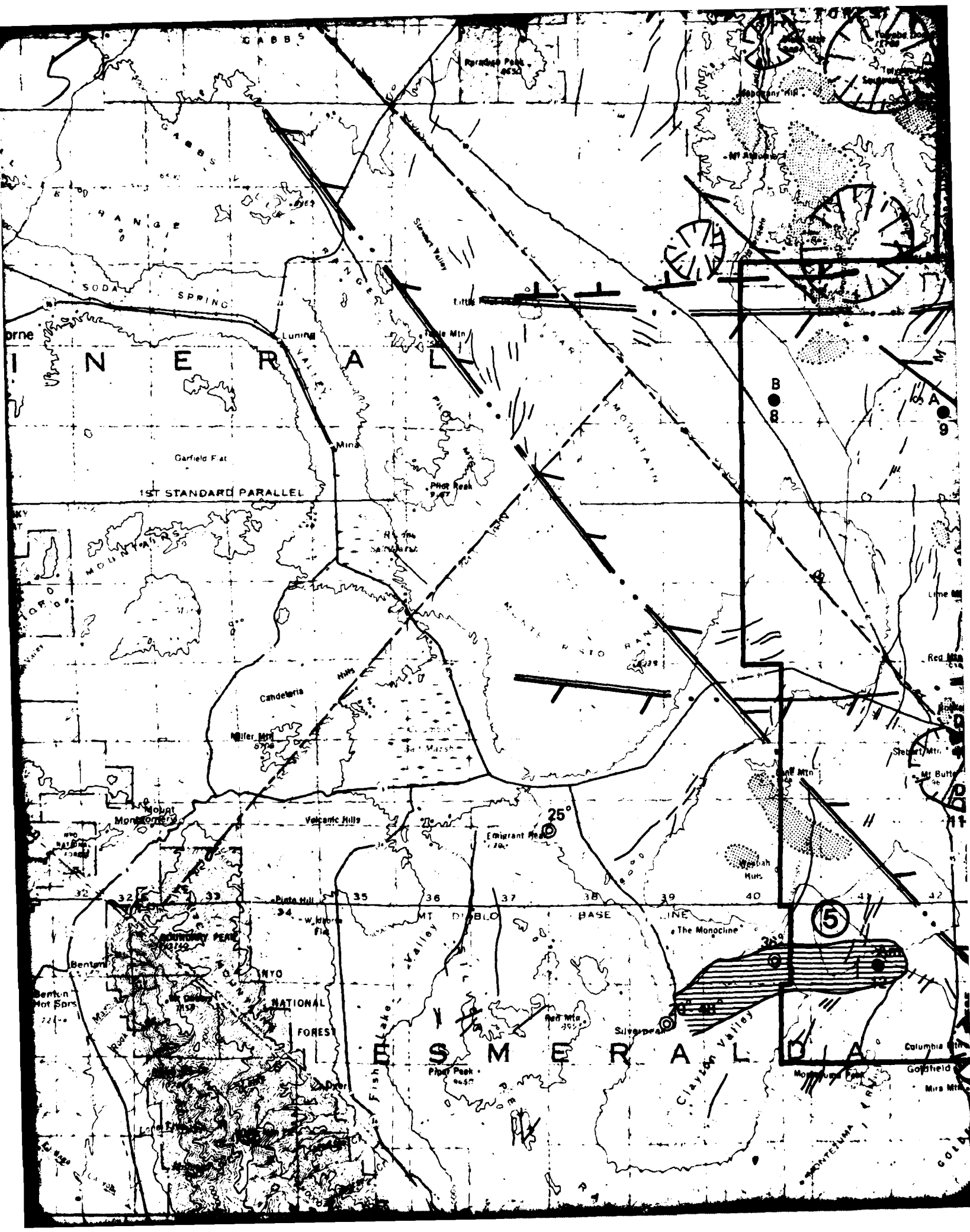


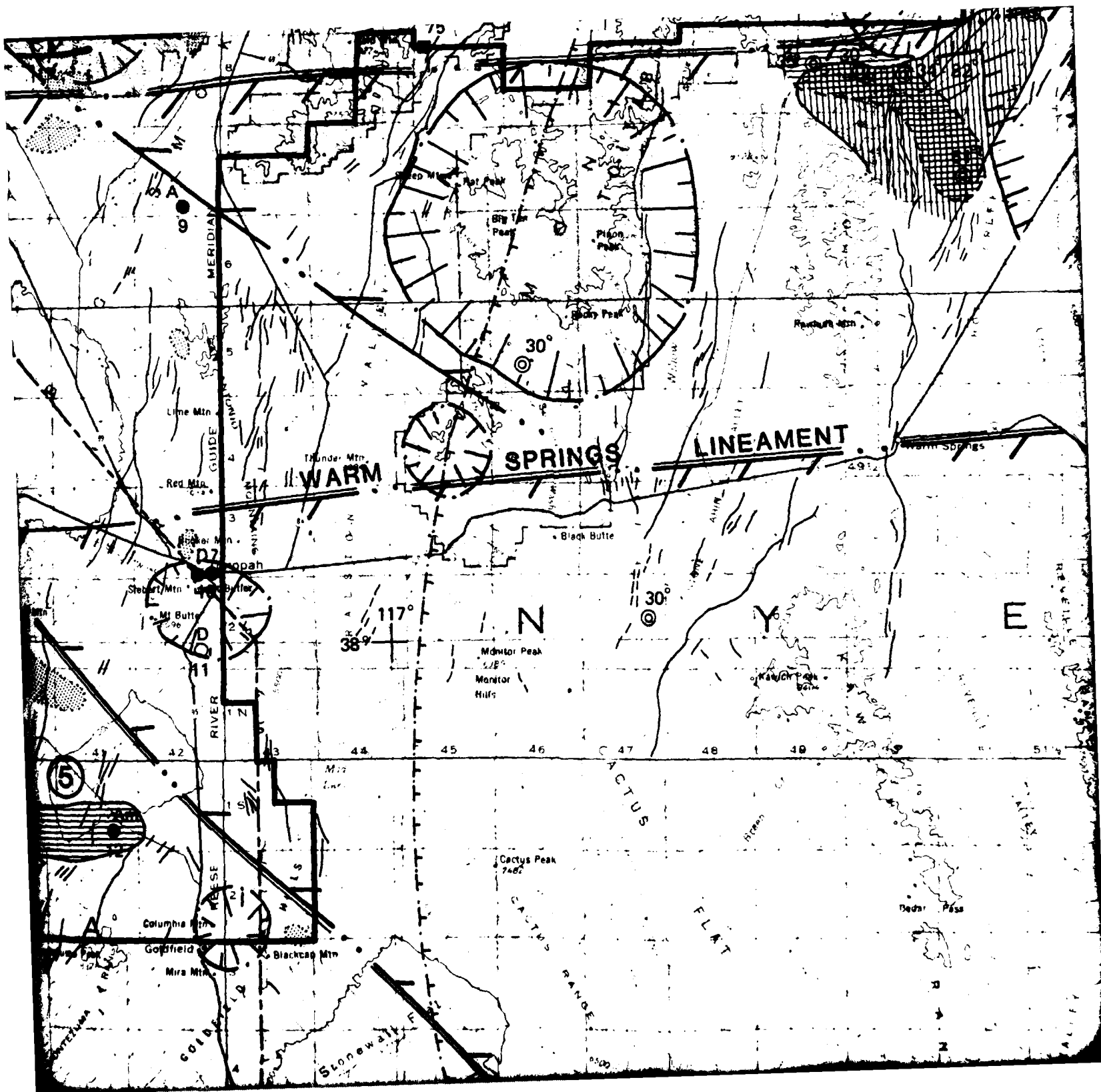


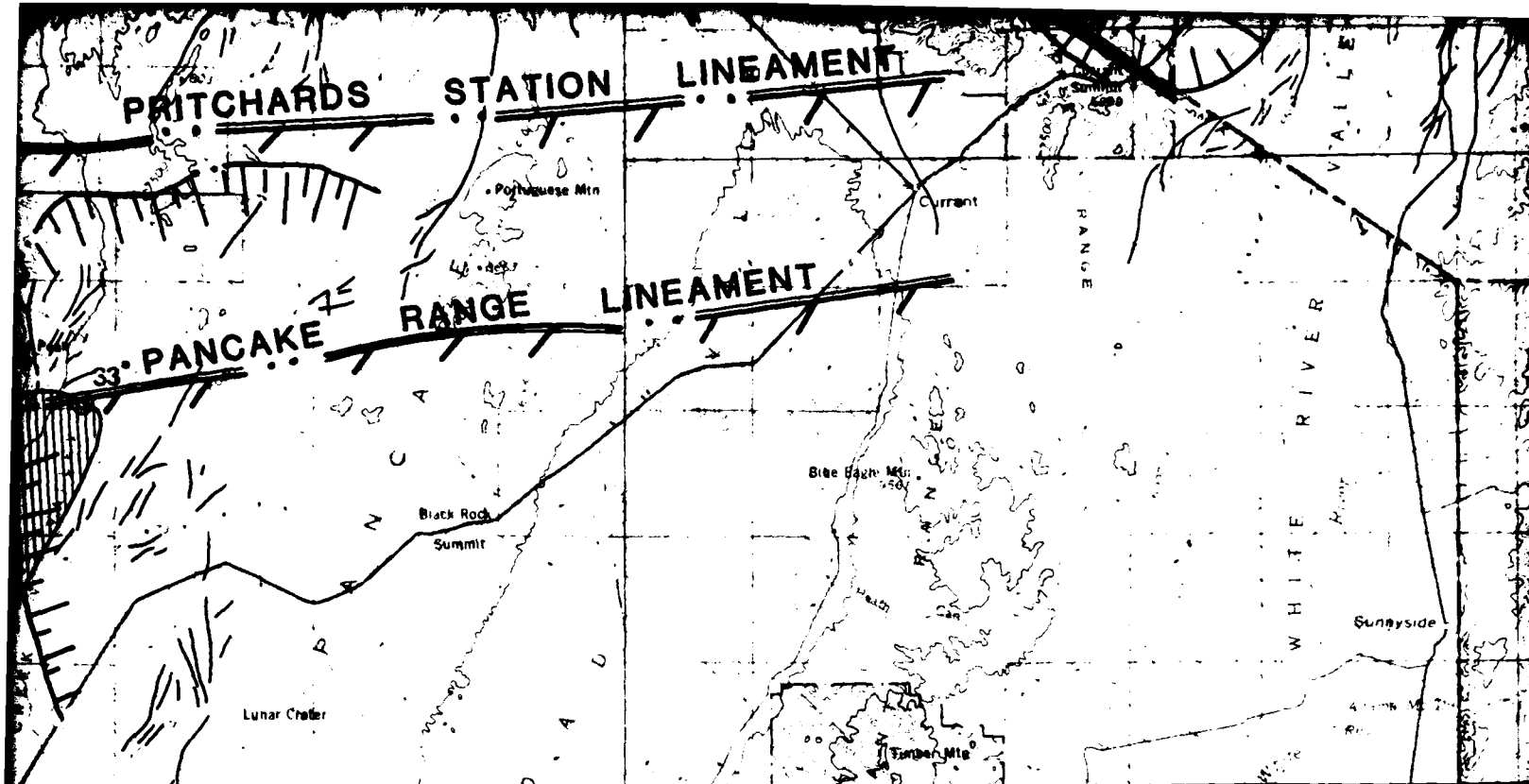


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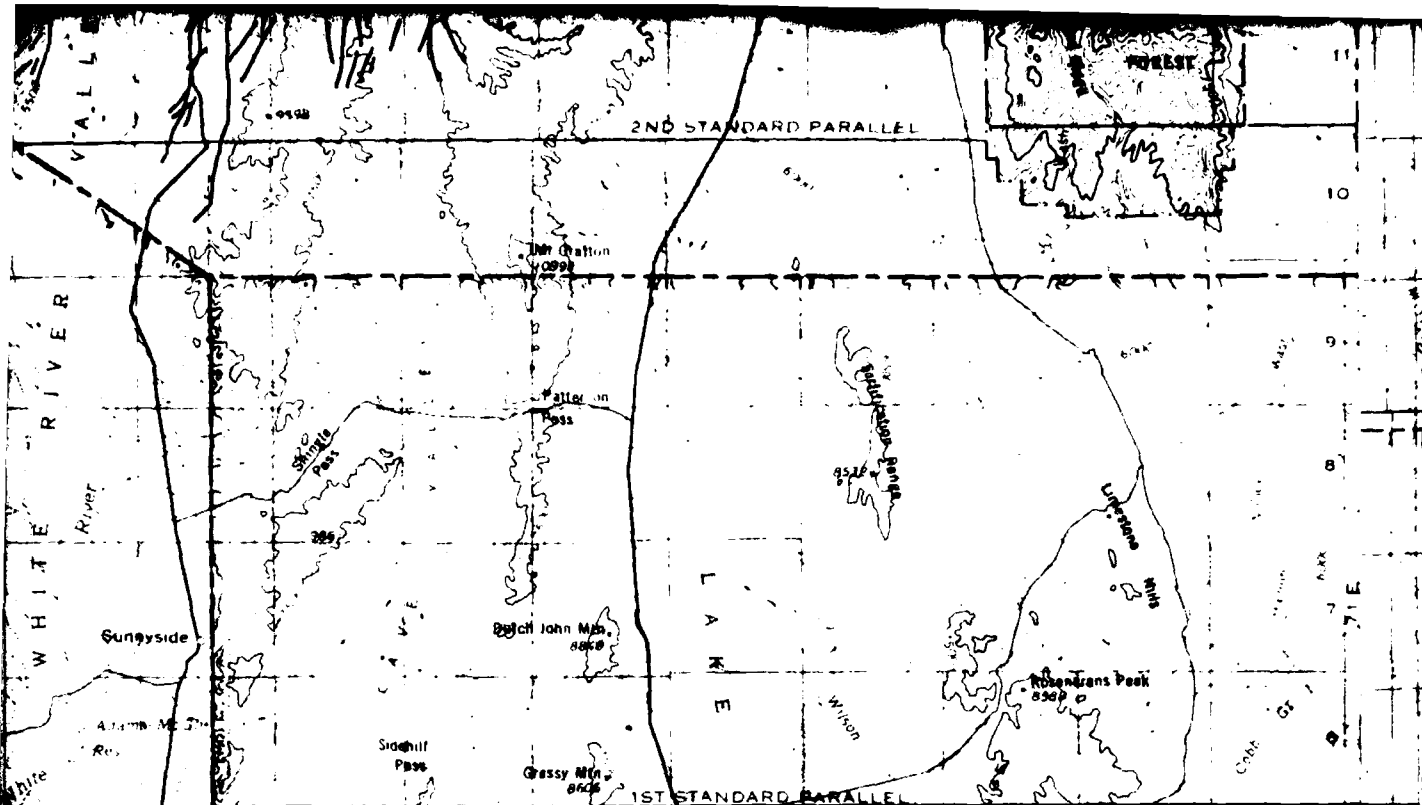






## EXPLANATION

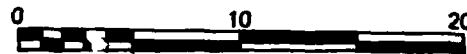
	MX ADDITIONAL VALLEY MINERAL RESOURCES SURVEY STUDY AREA SEPT. 26, 1980		AREA OF LOW TEMPERATURE GEOTHERMAL WATER POTENTIAL (NOAA, 1979)
	LATE TERTIARY AND QUATERNARY FAULT (FROM FUGRO 1980)		MAGNETIC HIGHS 11,200 GAMMAS (FROM ZIETZ AND OTHERS, 1978)
	LIMIT OF EUREKA HEAT FLOW LOW (FROM SASS AND OTHERS, 1980)	A	SPRING
	BATTLE MOUNTAIN HEAT FLOW HIGH (FROM DEPT. OF ENERGY, 1978)	B	WELL
	LINEAMENT (FROM EKREN AND OTHERS, 1976 AND THIS REPORT)	C	GEOTHERMAL TEST WELL
	LIMIT OF VOLCANIC CENTER (CALDERA ?)	D	MINE WORKINGS
	AREA OF GEOTHERMAL POTENTIAL	●	LOW SURFACE TEMPERATURE ( 90 C)
	AREA OF GEOTHERMAL POTENTIAL (FROM TREXLER AND OTHERS, 1979)	○	INTERMEDIATE TEMPERATURE (90 C TO NOTE: REFERENCE APPENDIX B FOR DETAILED DATA.
	THERMAL WELLS AND SPRINGS LOCATED OUTSIDE STUDY AREA (NOT LISTED IN APPENDIX B) (FROM TREXLER AND OTHERS, 1979 AND GARSIDE AND SCHILLING, 1979)		KNOWN GEOTHERMAL RESOURCE AREA
	HEAT FLOW MEASUREMENT (IN MW/m <sup>2</sup> , 1 HFU = 41.87 MW/m <sup>2</sup> )	58	MAP NUMBER (REFERENCE APPENDIX B)
		m	MULTIPLE WELLS OR SPRINGS IN IMMEDIATE VICINITY
		?	POSITION UNCERTAIN
		A m	EXAMPLE: LOW TEMPERATURE SPRING, IN APPENDIX B; MULTIPLE SPRINGS IN VICINITY; LOCATION UNCERTAIN.
		25	



NUMBERS REFER TO FAVORABLE AREAS FOR GEOTHERMAL POTENTIAL (PRIORITIZED)

- ① BIG SMOKY VALLEY, NORTH
- ② MONITOR VALLEY, CENTRAL
- ③ MONITOR VALLEY, NORTH
- ④ ANTELOPE VALLEY
- ⑤ BIG SMOKY VALLEY, SOUTH
- ⑥ BUTTE VALLEY, NORTH
- ⑦ LITTLE FISH LAKE VALLEY
- ⑧ BUTTE VALLEY, SOUTH
- ⑨ WHITE RIVER VALLEY

SCALE 1:500,000



STATUTE MILES



KILOMETERS



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DEPARTMENT OF THE AIR FORCE  
BMO/AFRC-MX

LOCATION OF GEOTHERMAL WATER  
AND GEOTHERMAL FAVORABILITY MAP  
OF THE MX ADDITIONAL VALLEY  
MINERAL RESOURCES  
SURVEY STUDY AREA

30 APR. 1981

DRAWING 16



116°00' 40'00" 59 R 54 E 40 R 55 E 45 61 R 56 E 62 R 57 E 30 63 R 58 E

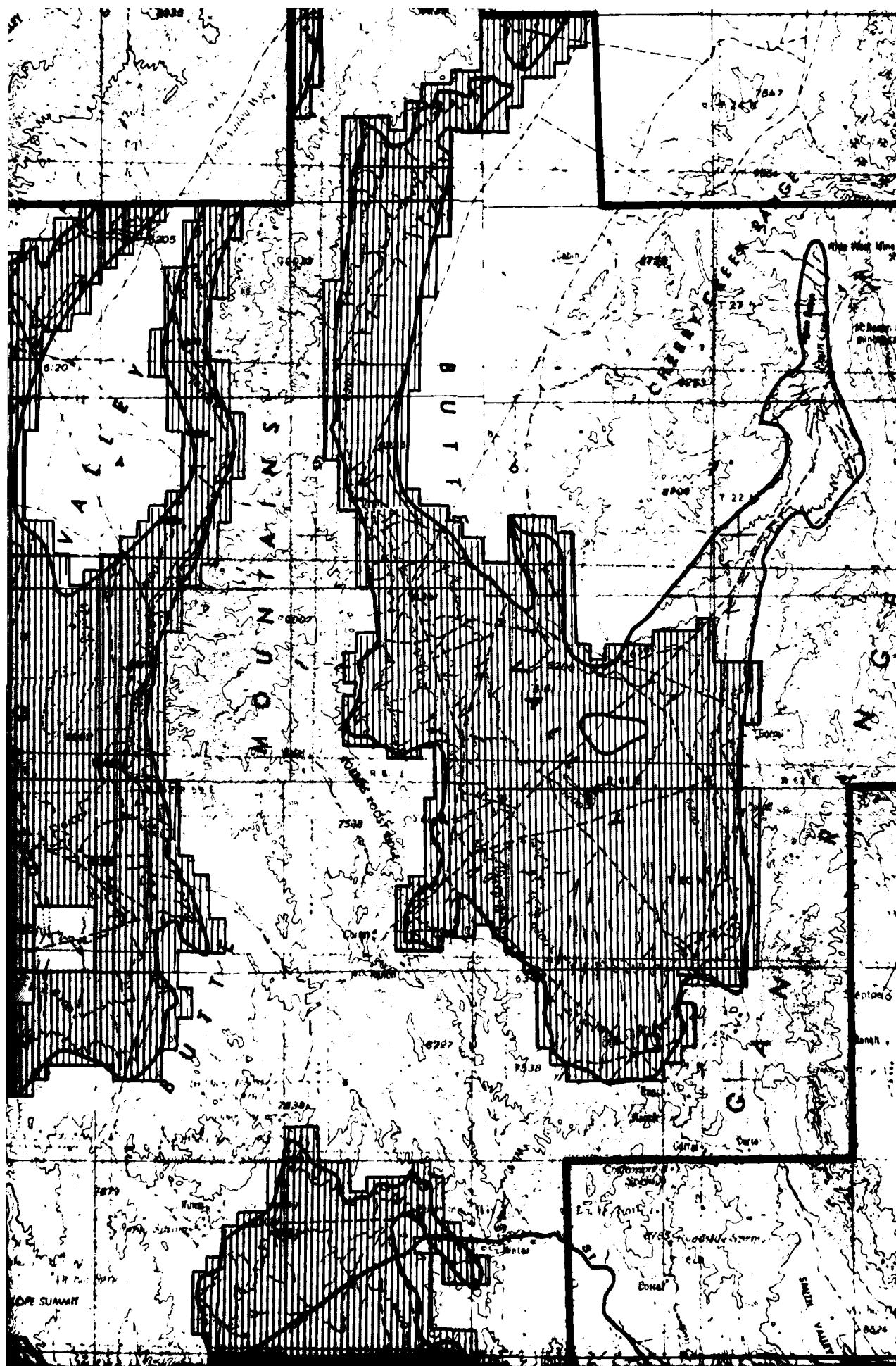


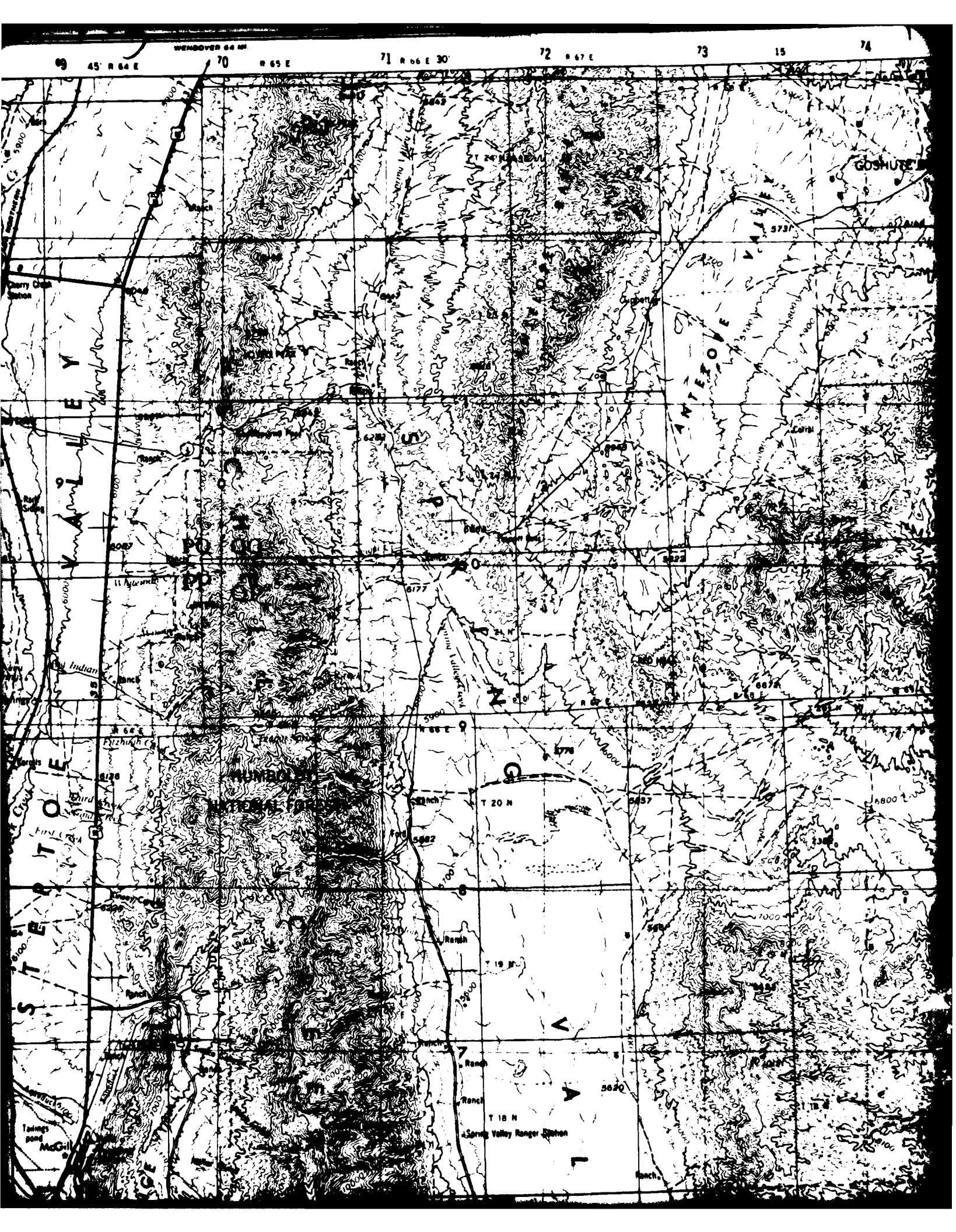
AUSTIN 88 MI 64 MI TO U.S. 40

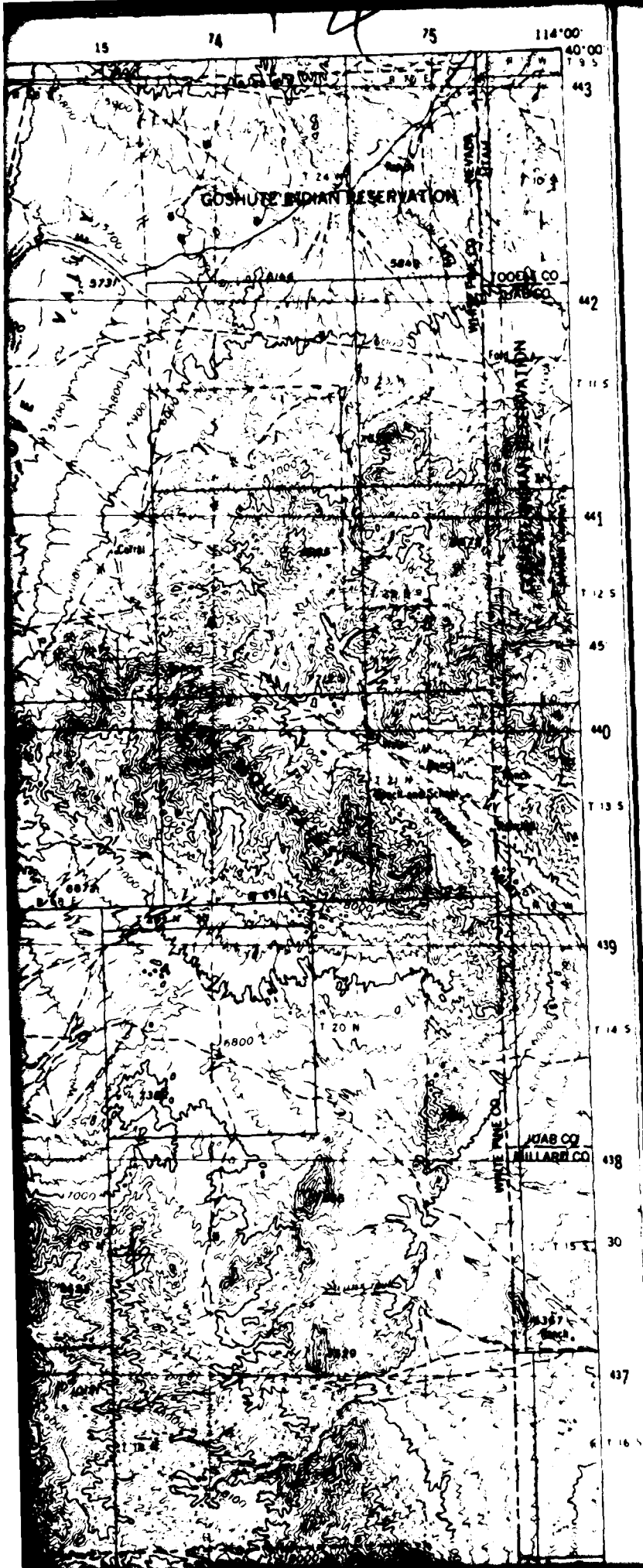
T 18 N 30 437 436

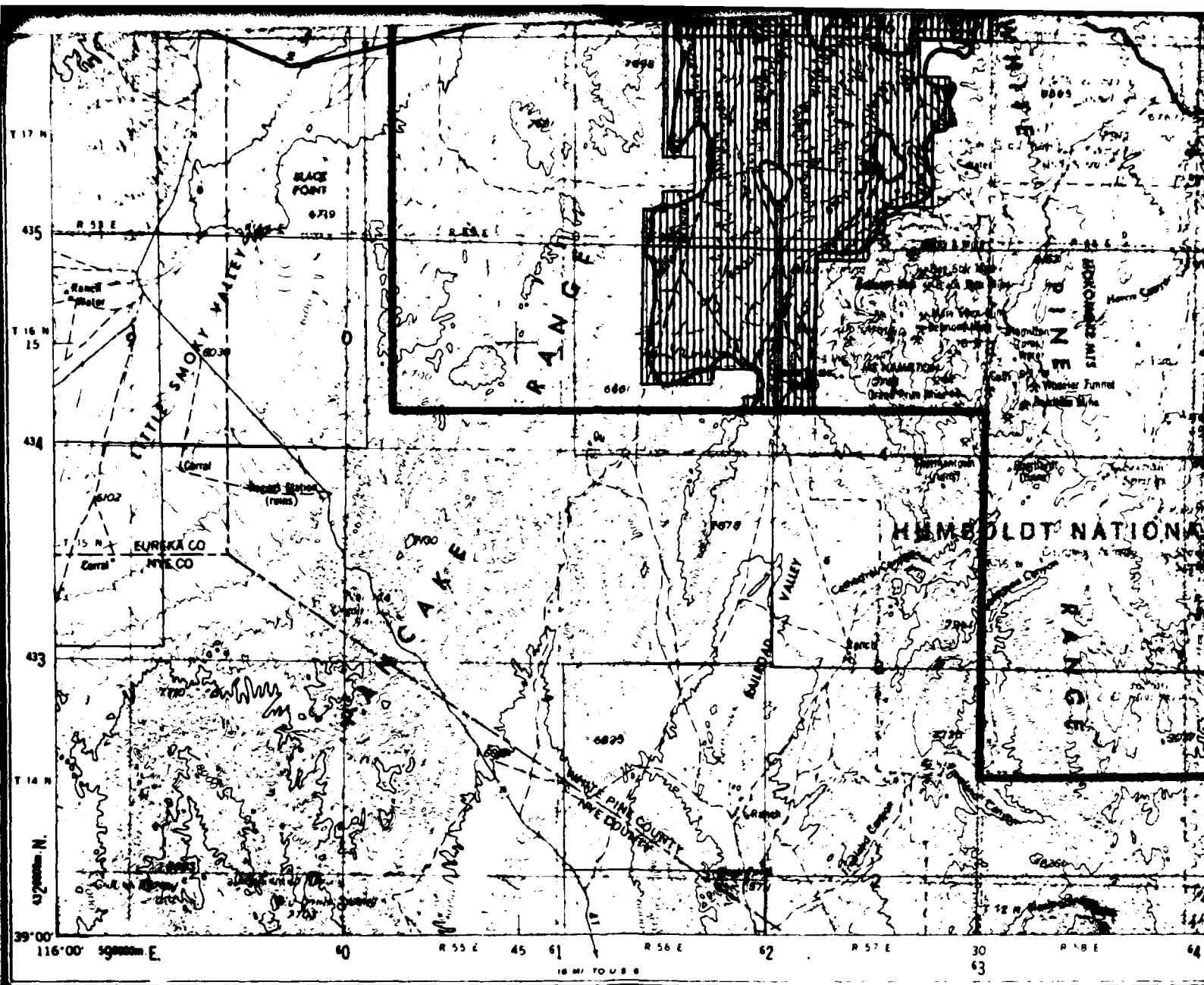
VIRE ANKLOPE SUMMIT











## ELY 2° QUADRANGLE

Base prepared by the U.S. Army Topographic Command, Washington, D.C.



OIL AND GAS LEASES



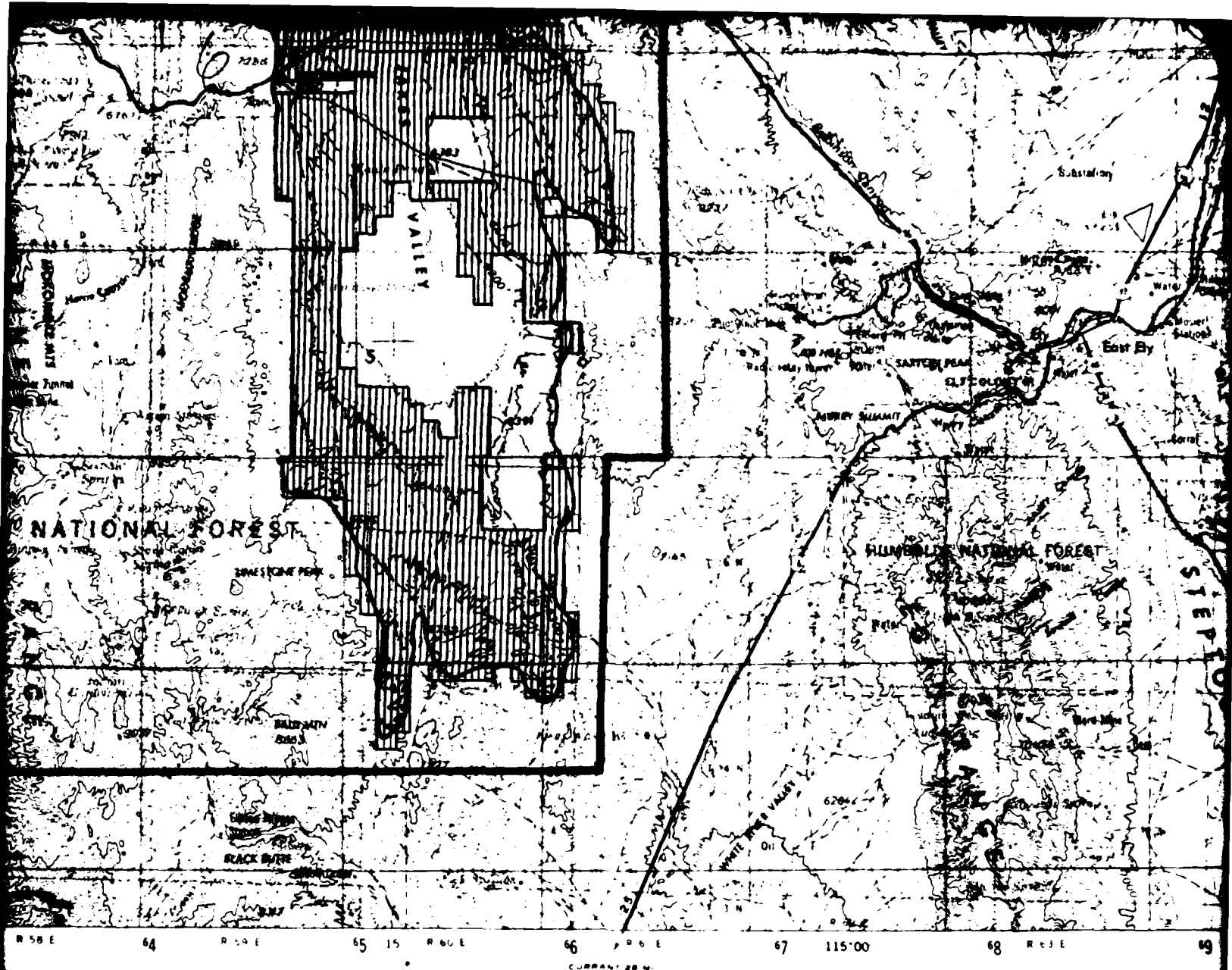
GEOTHERMAL LEASES



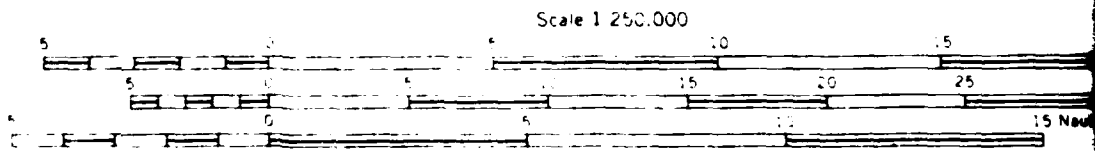
MX ADDITIONAL VALLEY MINERAL  
RESOURCES SURVEY STUDY AREA  
BOUNDARY SEPTEMBER 26, 1980



MX DEPLOYMENT AREA



MINERAL  
LEASE AREA  
1980

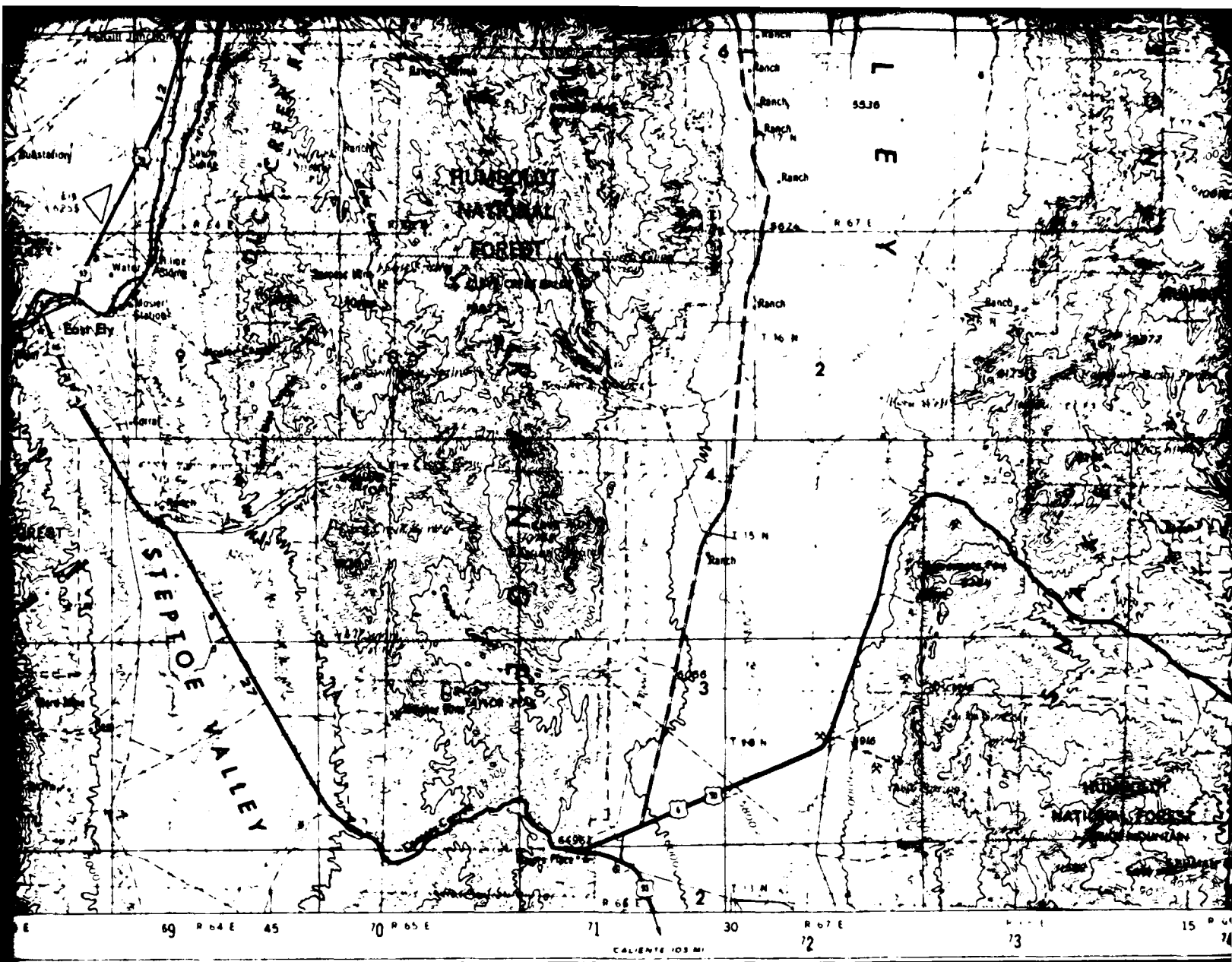


CONTOUR INTERVAL 200 FEET  
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS  
TRANSVERSE MERCATOR PROJECTION

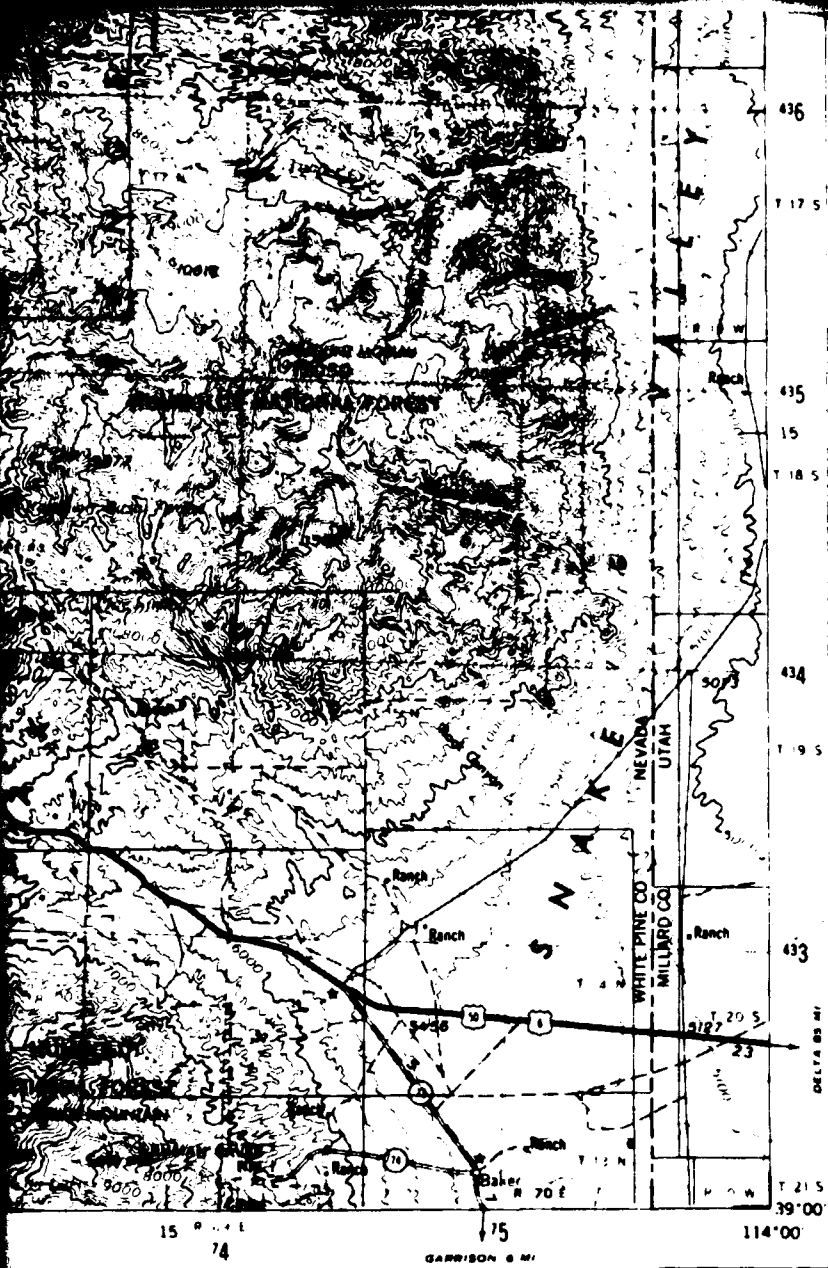
BLACK NUMBERED LINES INDICATE THE 10 000 METER UNIVERSAL TRANSVERSE MERCATOR GRID ZONE 11  
1970 MAGNETIC DECLINATION FROM TRUE NORTH VARIES FROM 16M (200 MILS) EASTERLY FOR  
THE CENTER OF THE WEST EDGE TO 18 (280 MILS) EASTERLY FOR THE CENTER OF THE EAST EDGE

NOTE: REFERENCE APPENDIX A-1 FOR  
DETAILED DESCRIPTION OF LEASE DATA.

DATA FROM: WOODWARD AND AIM (1980)



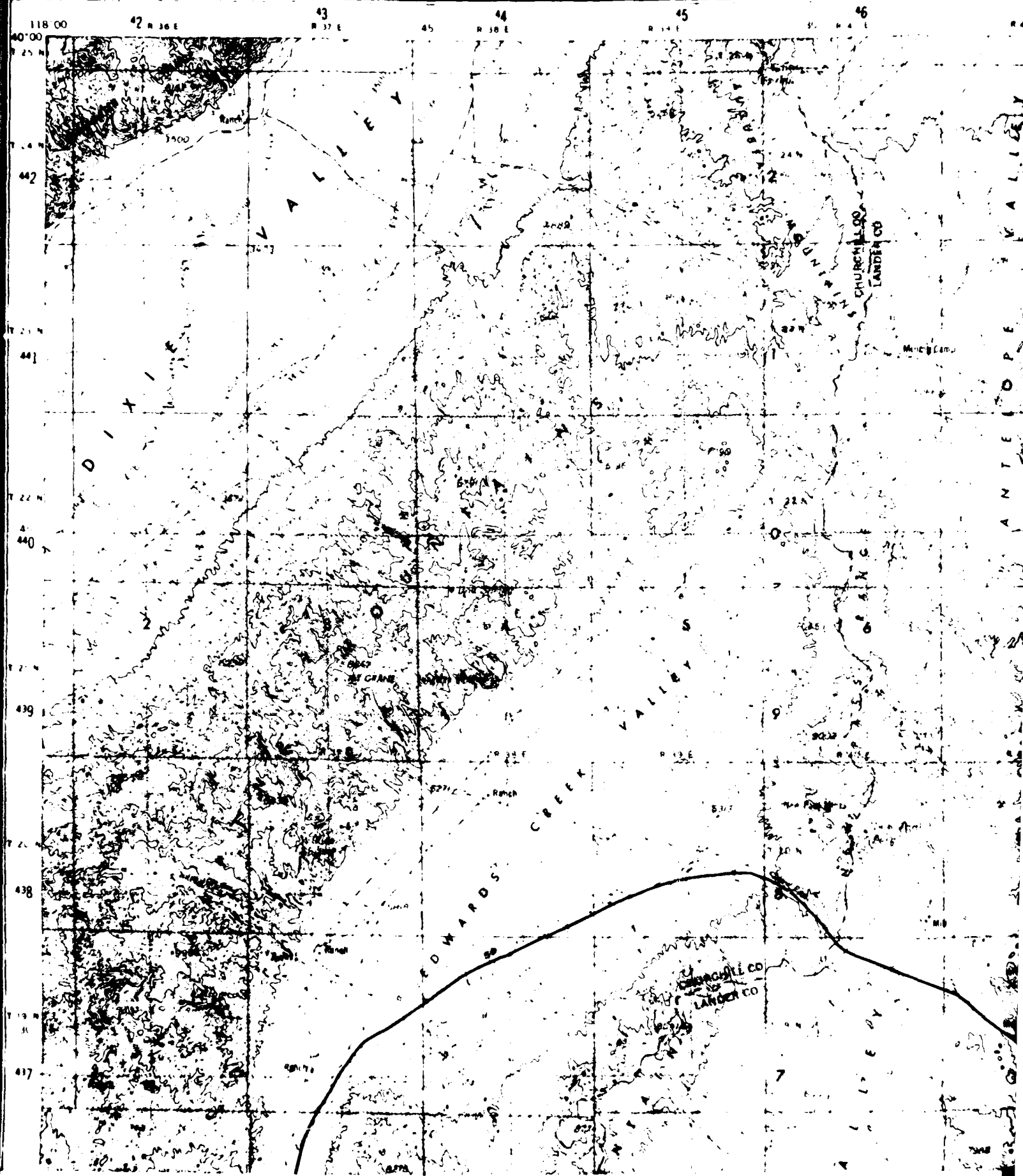




**Ertec**  
Technology Corporation

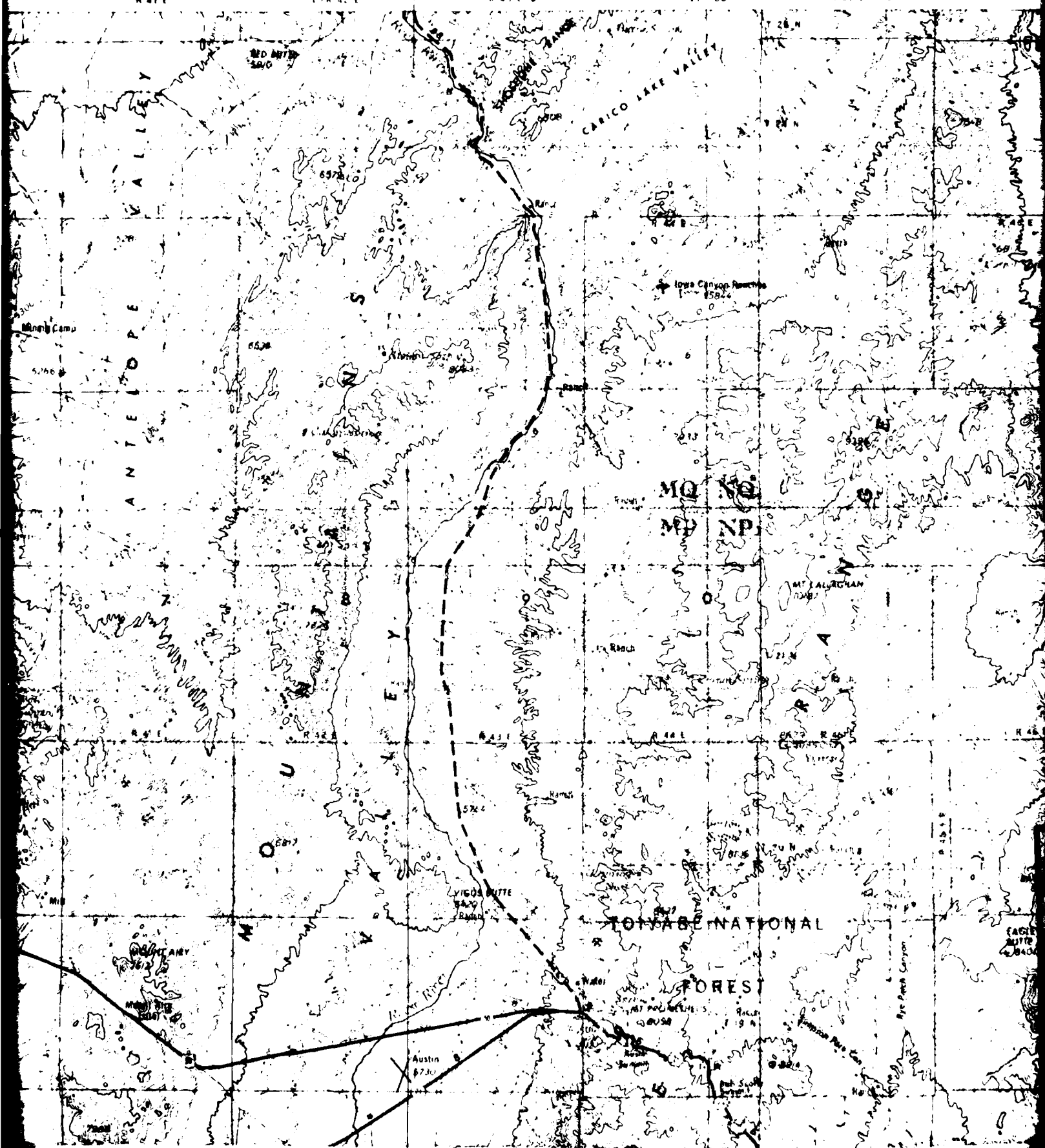
MX SITING INVESTIGATION  
DEPARTMENT OF THE AIR FORCE  
BMO/AFRCE-MX

**LAND STATUS-FEDERAL LEASES**  
MAP 1 OF 4





Q 44: 51



13

1

51

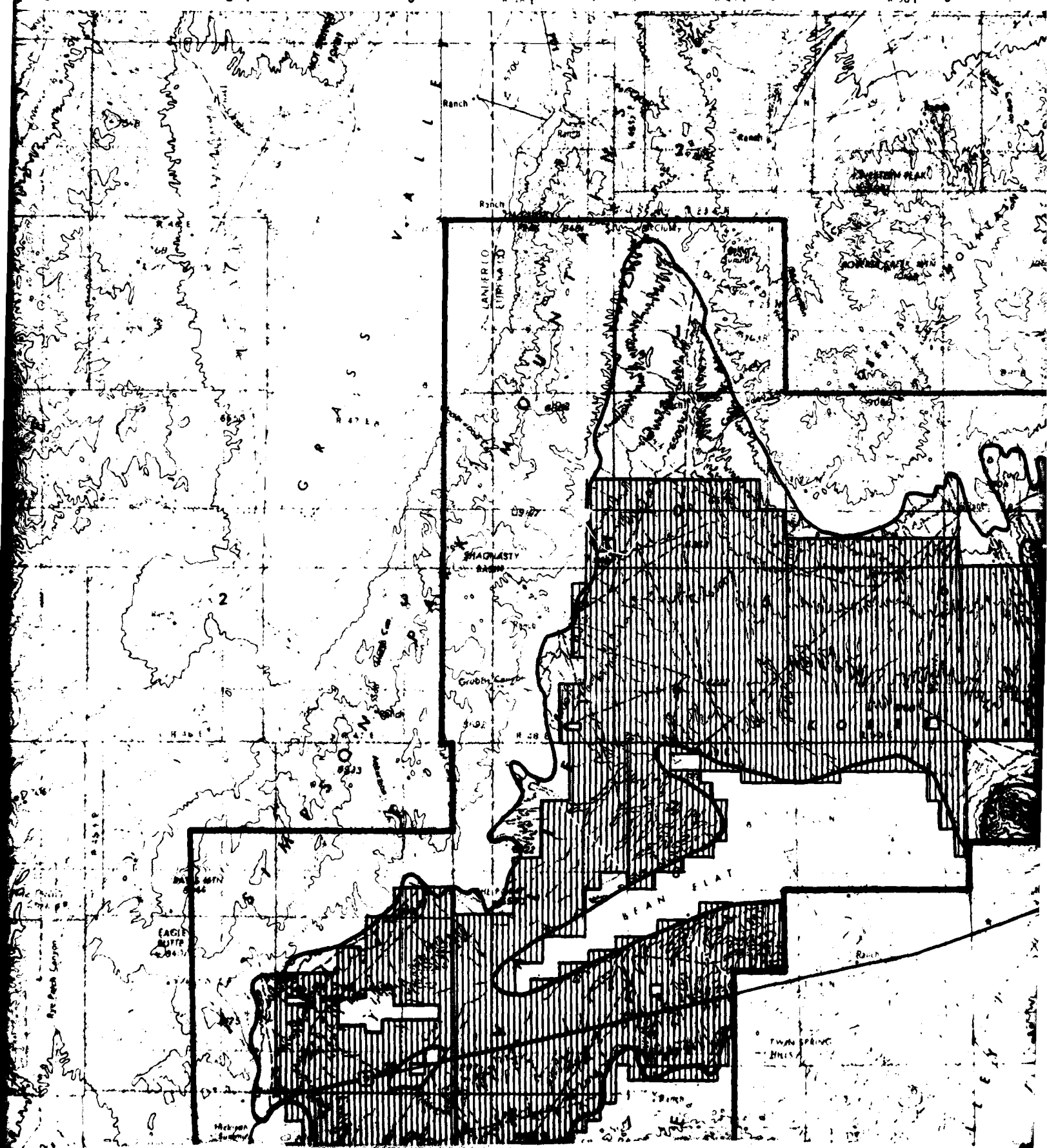
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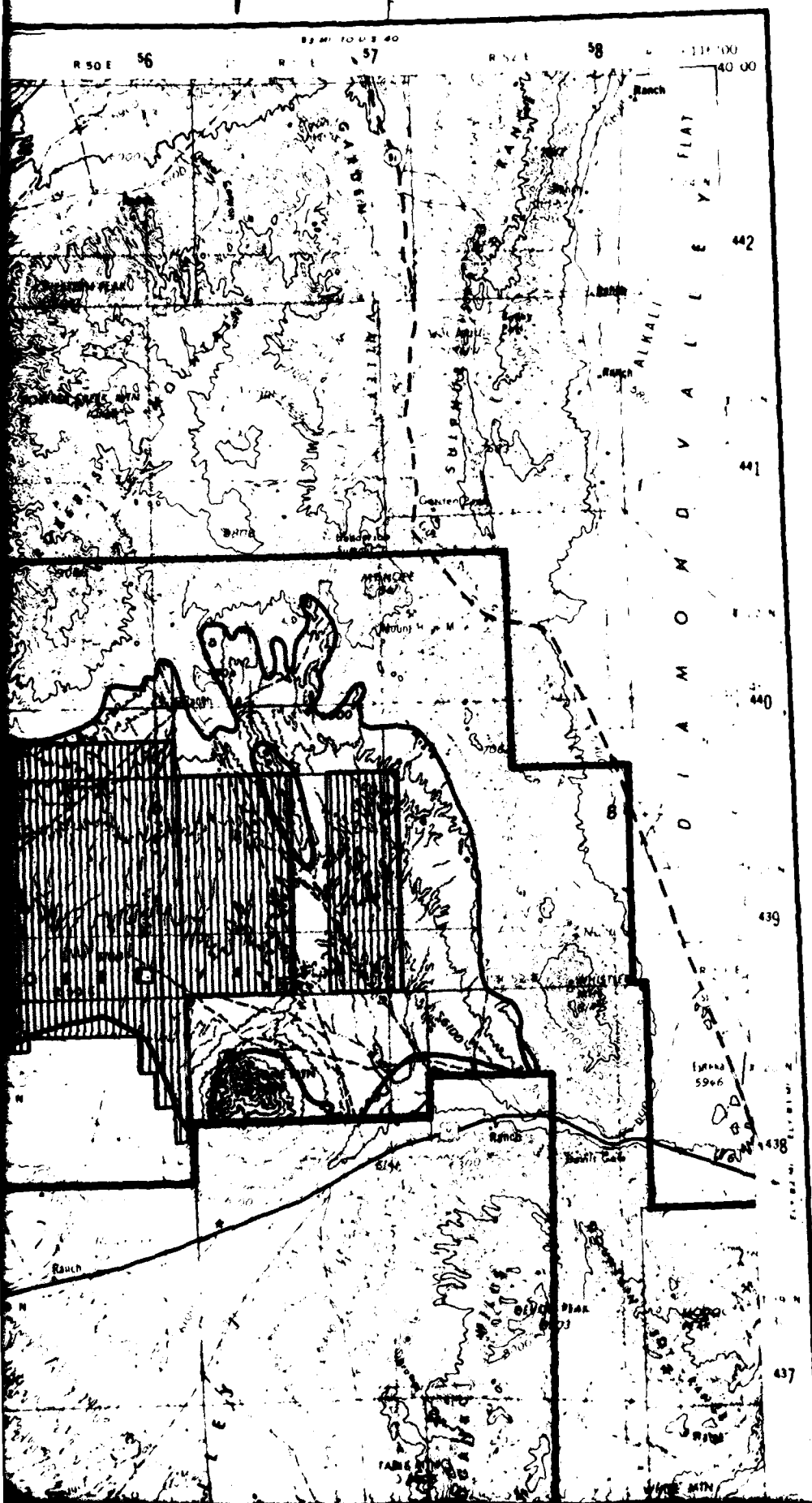
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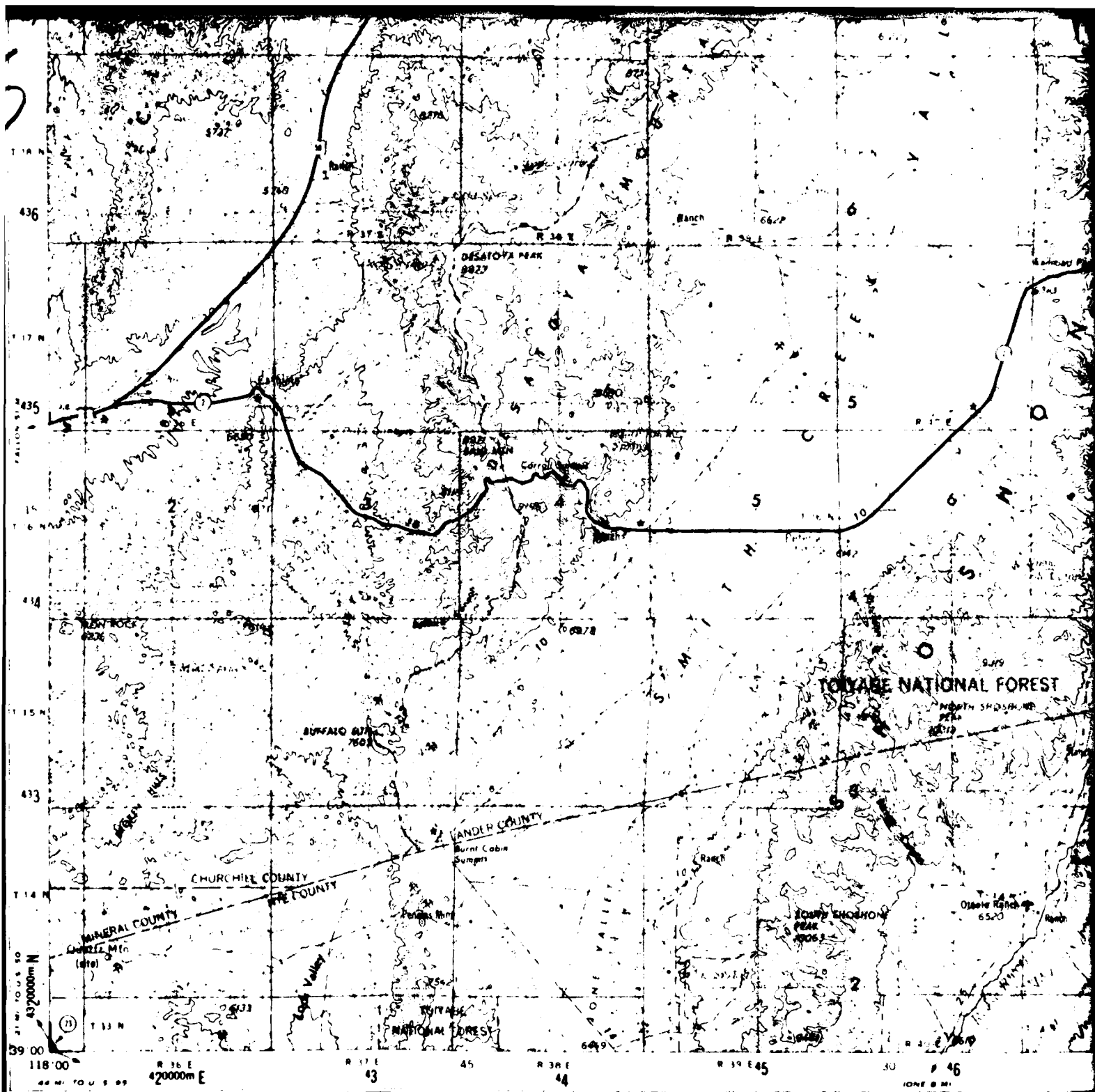
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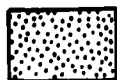


## MILLETT 2° QUADRANGLE

Base prepared by the U.S. Army Topographic Command, Washington, D.C.



OIL AND GAS LEASES



GEOTHERMAL LEASES

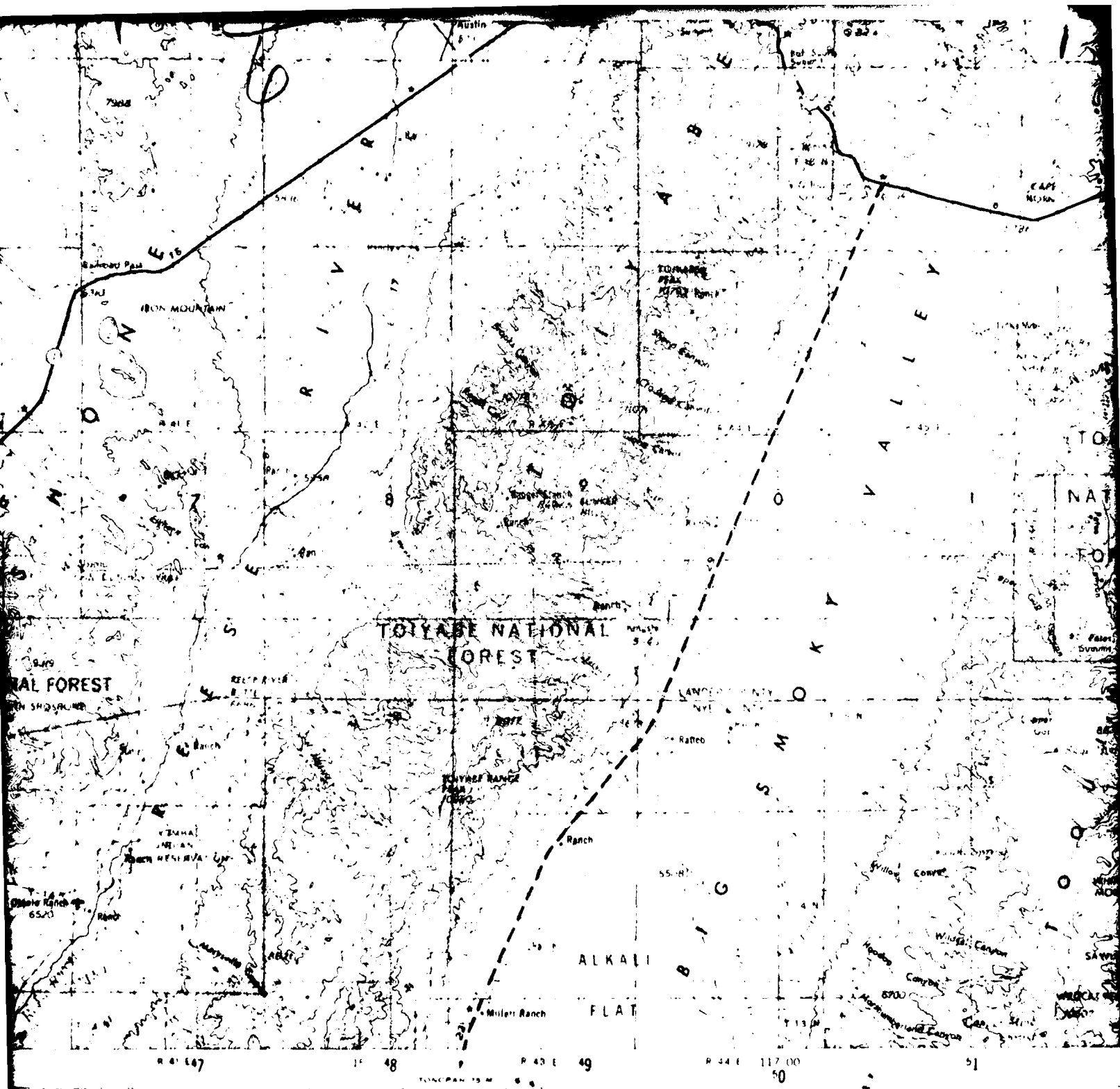


MX ADDITIONAL VALLEY MINERAL  
RESOURCES SURVEY STUDY AREA  
BOUNDARY SEPTEMBER 26, 1980

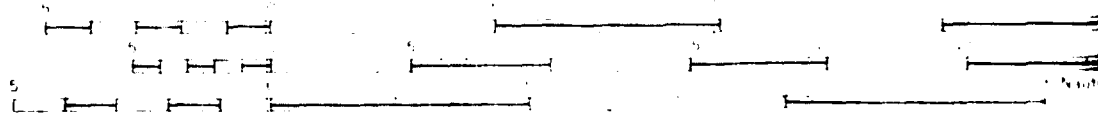


MX DEPLOYMENT AREA

NO



Scale 1:25,000



CONTOUR INTERVAL 200 FEET  
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION

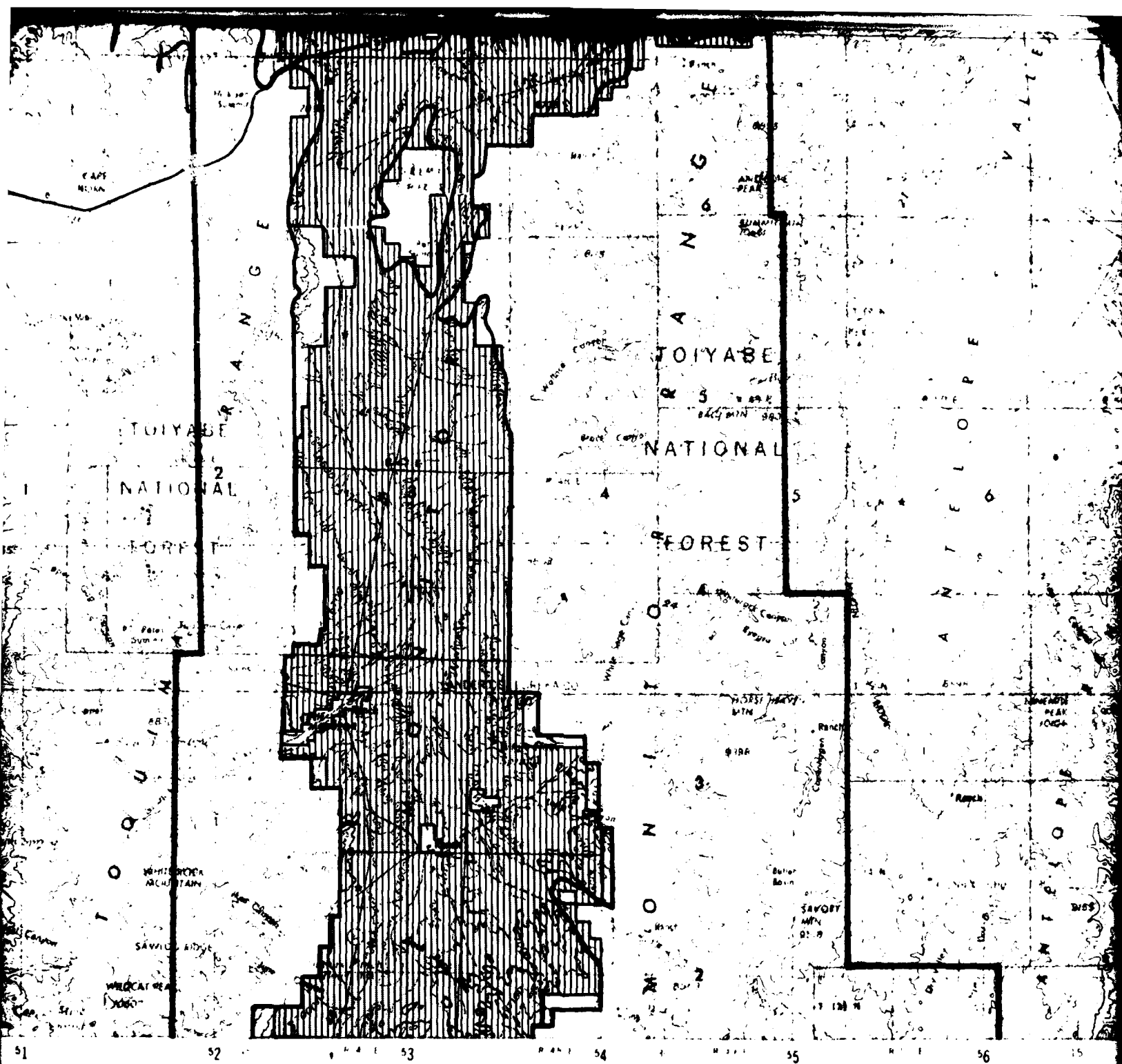
BLACK NUMBERED LINES INDICATE THE 1000 METER UNIVERSAL TRANSVERSE MERCATOR GRID ZONE 11

NOTE: REFERENCE APPENDIX A-1 FOR  
DETAILED DESCRIPTION OF LEASE DATA.

1975 MAGNETIC DECLINATION FROM TRUE NORTH VARIES FROM 17° 300 MILS. EASTERLY FOR THE  
CENTER OF THE WEST EDGE TO 18° 700 MILS. EASTERLY FOR THE CENTER OF THE EAST EDGE

DATA FROM: WOLF WARD

GENERAL  
AREA  
1980



LOCATION DIAGRAM

**Ertec**  
The Earth Technology Corporation

**LAND ST**

30 APR 81

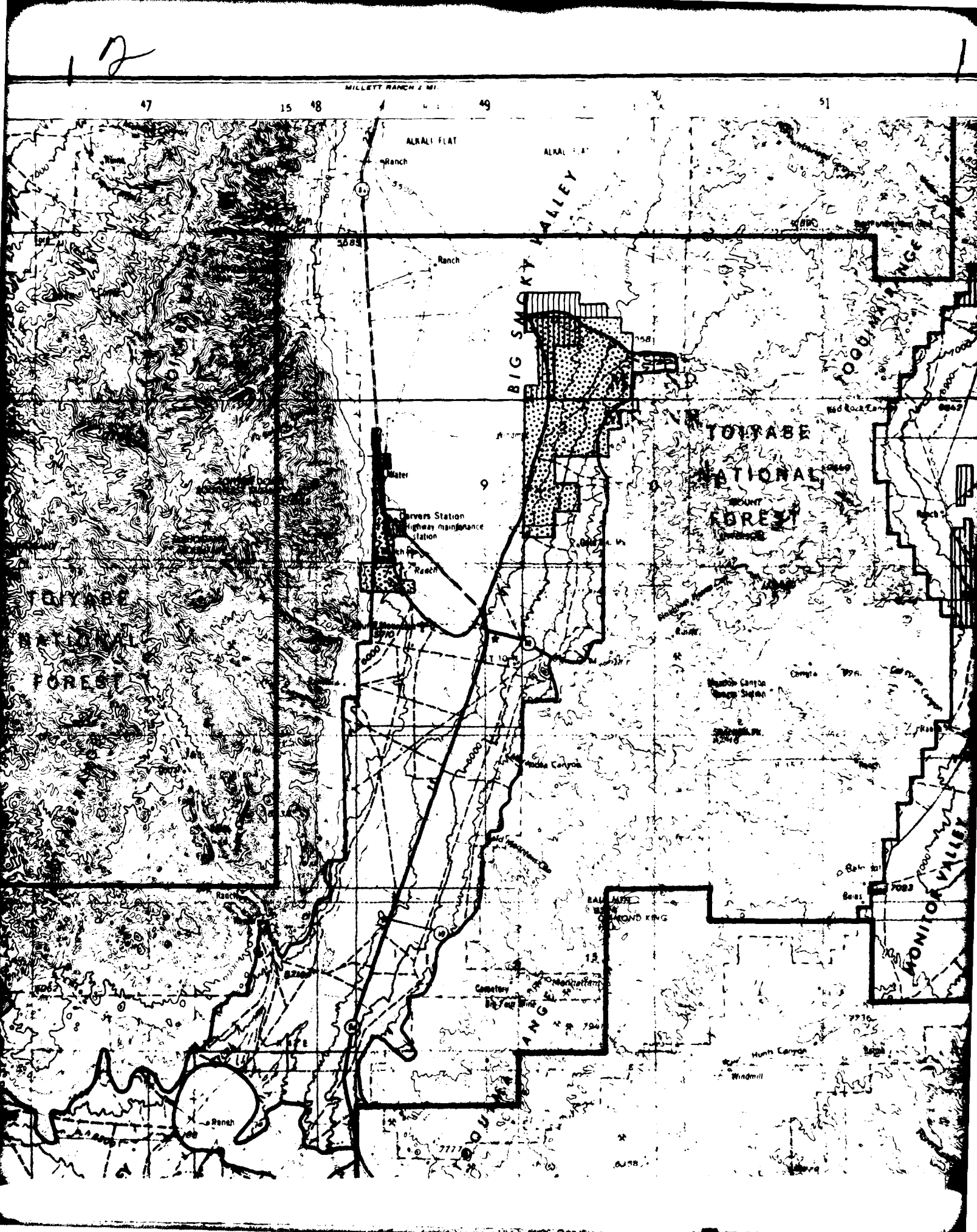
FROM: WOODWARD AND AIM (1980)











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80 MI TO U S 80

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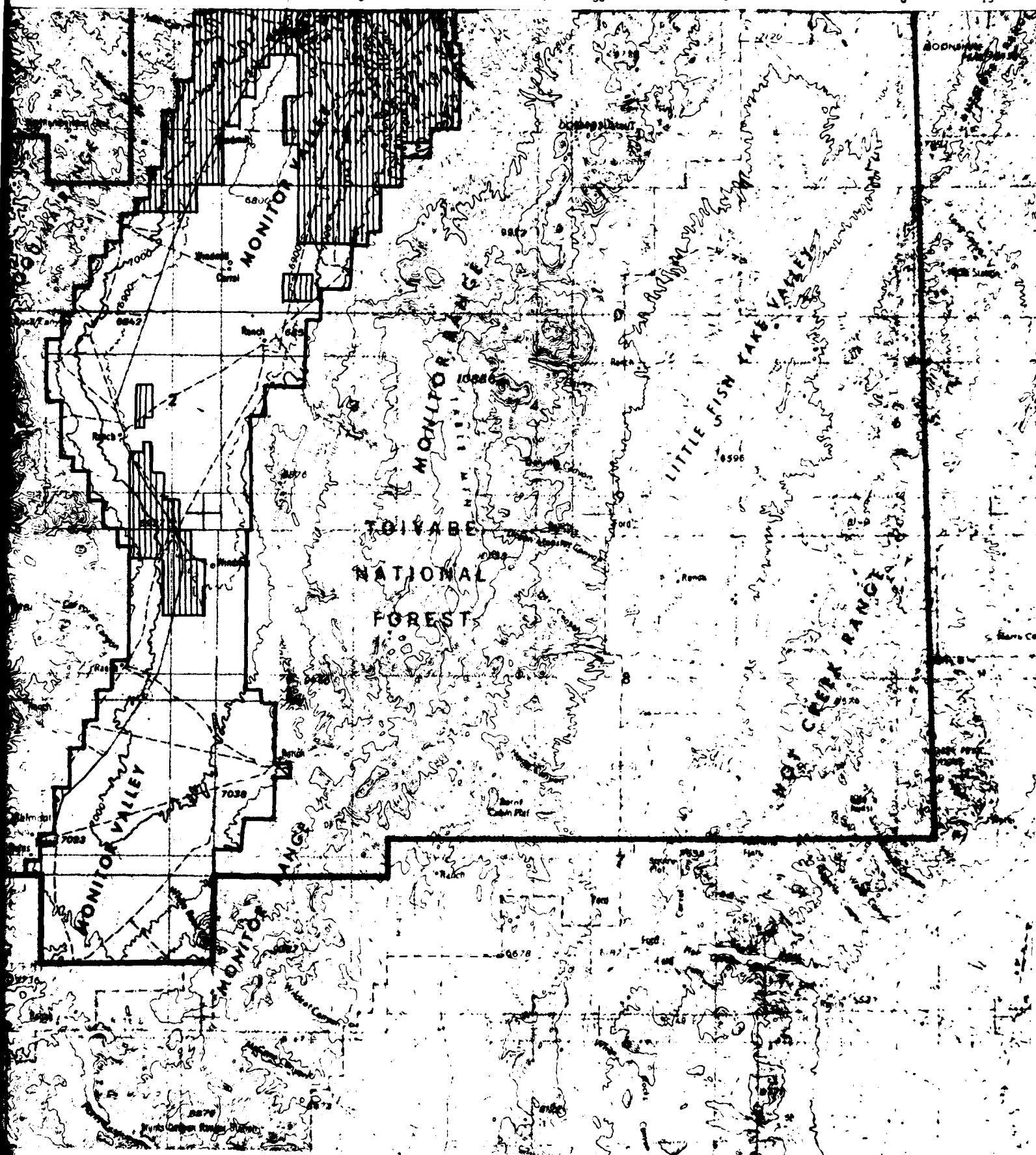
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30

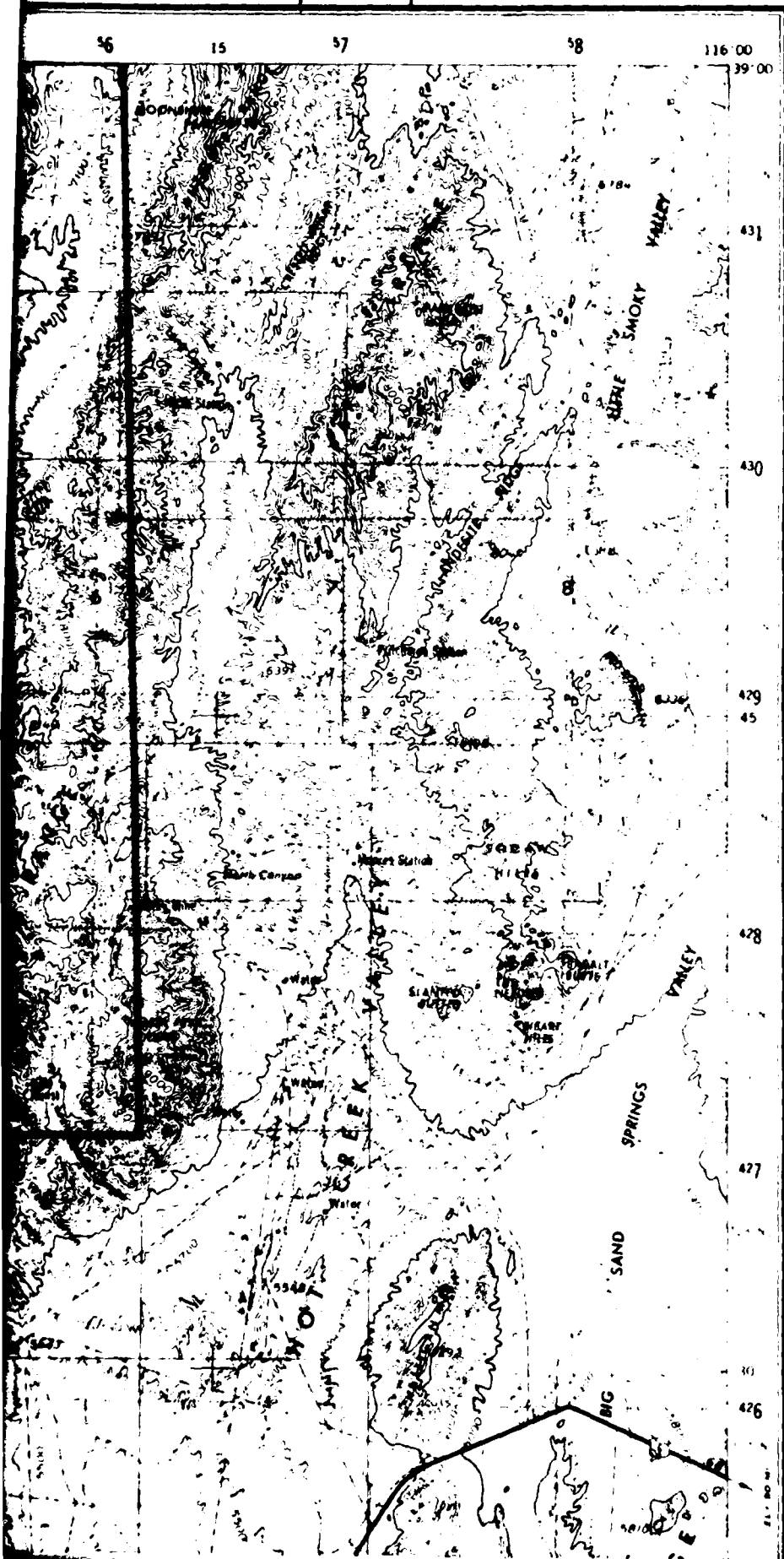
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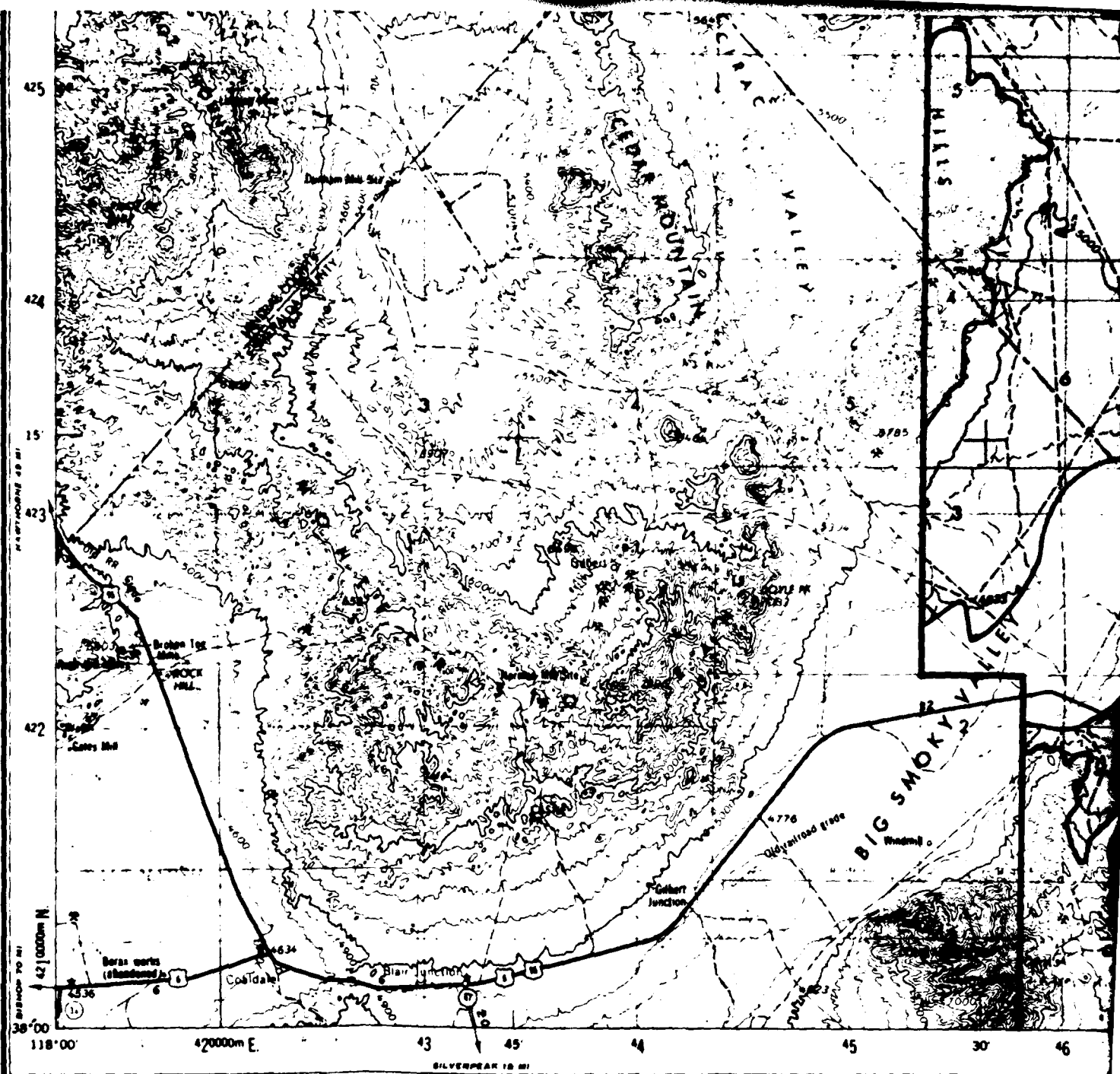
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4



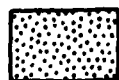


## TONOPAH 2° QUADRANGLE

Base prepared by the U.S. Army Topographic Command, Washington, D.C.



OIL AND GAS LEASES



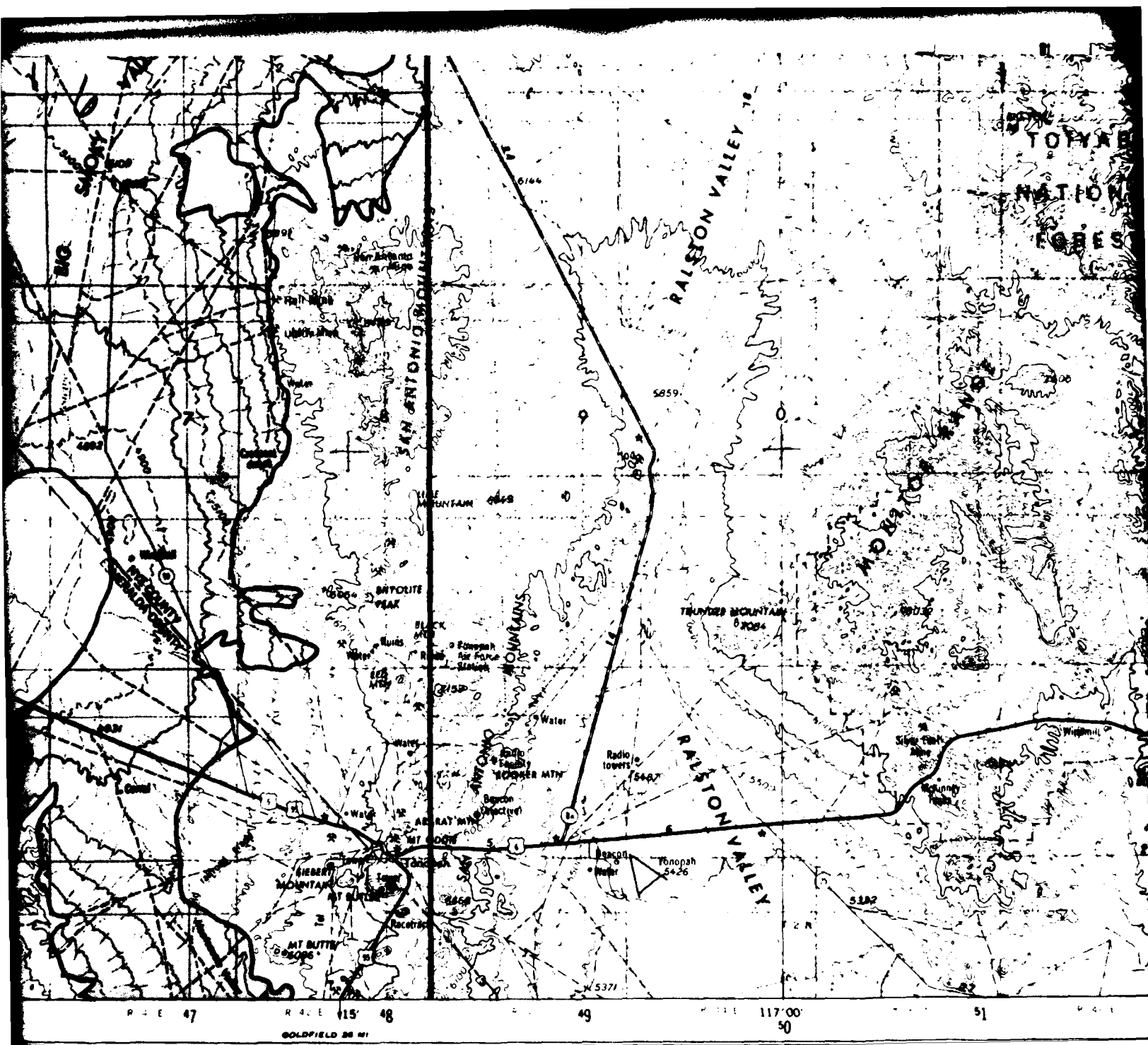
GEOHERMAL LEASES

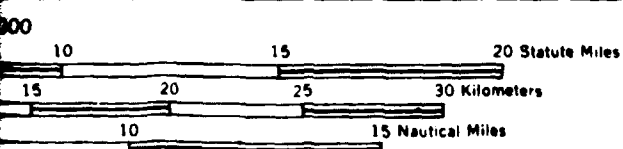
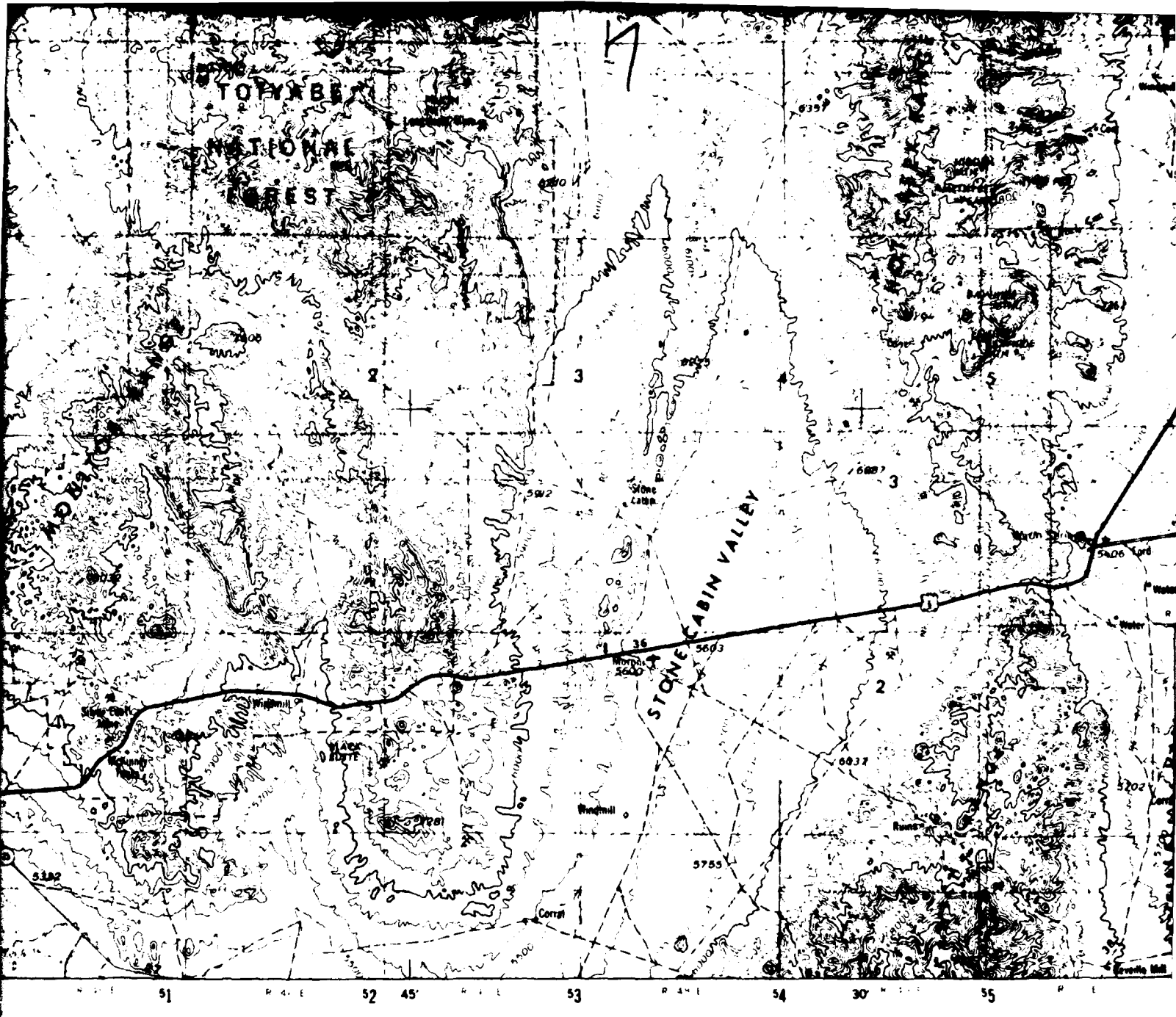


MX ADDITIONAL VALLEY MINERAL RESOURCES SURVEY STUDY AREA BOUNDARY SEPTEMBER 26, 1968



MX DEPLOYMENT AREA





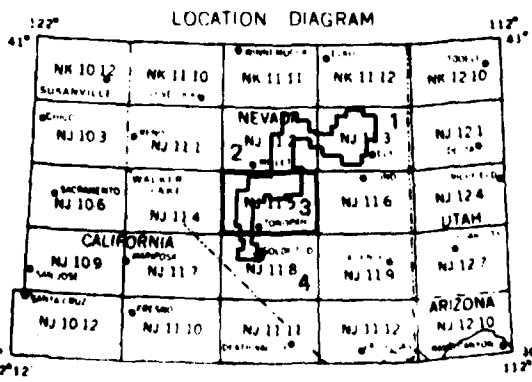
200 FEET  
AT 100 FOOT INTERVALS

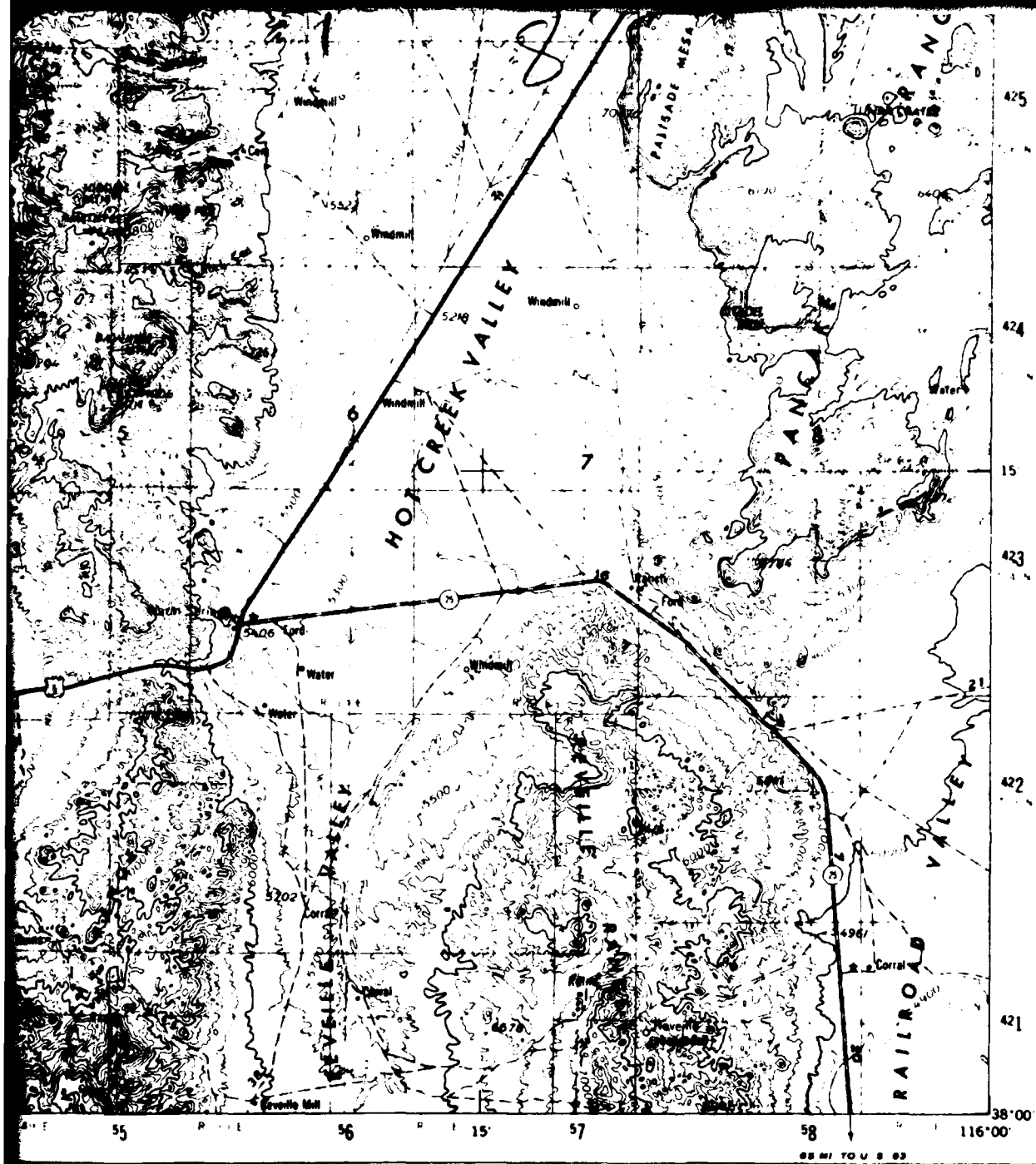
PROJECTION

UTM TRANSVERSE MERCATOR GRID, ZONE 11

MILES: EASTERLY FOR  
CENTER OF THE EAST EDGE

WM: WOODWARD AND AIM (1980)





DIAGRAM

111	NK 11 12	NK 12 10
11	NJ 13	NJ 12 1
113	NJ 11 6	NJ 12 4
118	NJ 11 9	NJ 12 7
111	NJ 11 12	ARIZONA NJ 12 10

**Ertec**

The Earth Technology Corporation

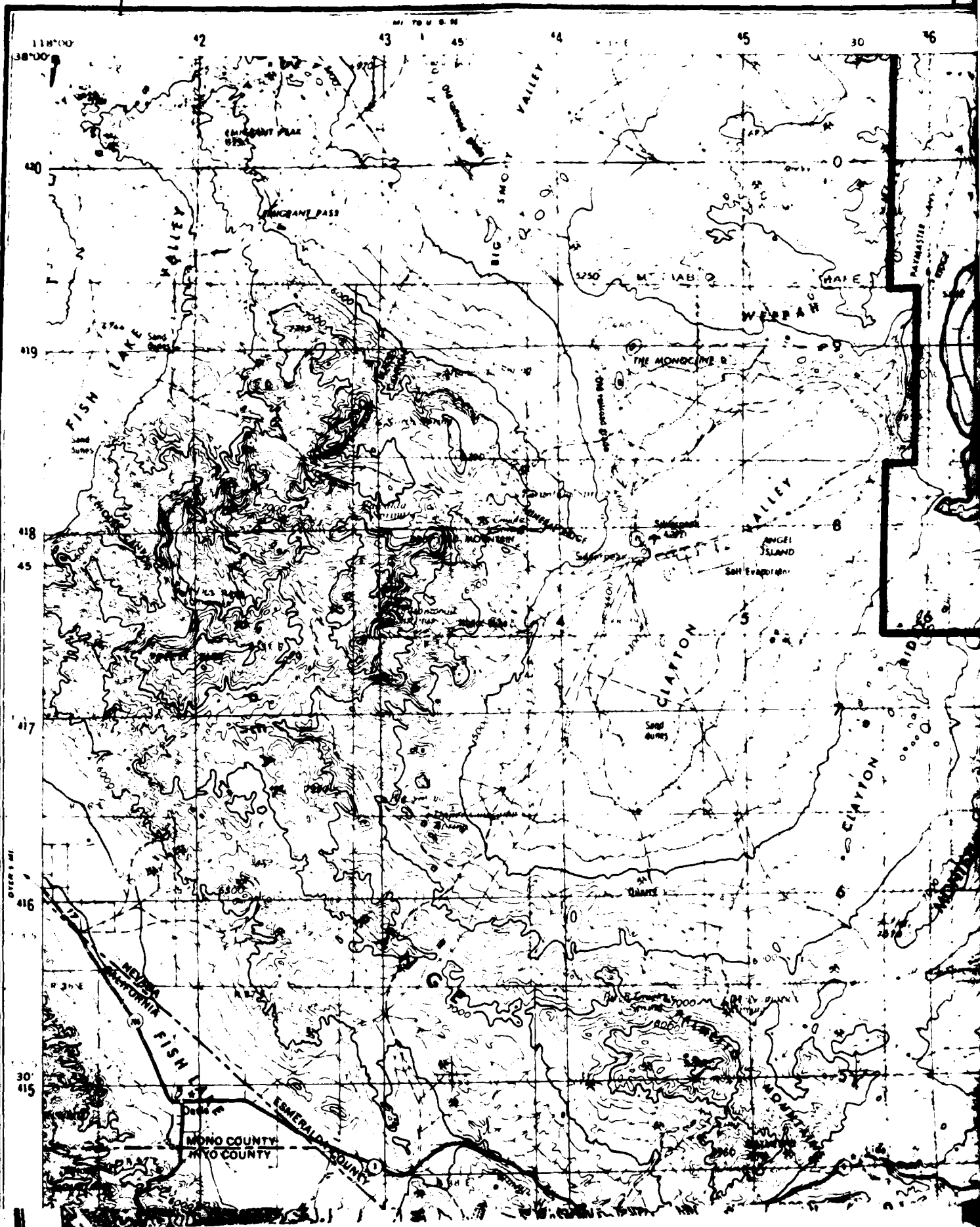
MX SITING INVESTIGATION  
DEPARTMENT OF THE AIR FORCE  
BMO/AFRCE-MX

# LAND STATUS-FEDERAL LEASES MAP 3 OF 4

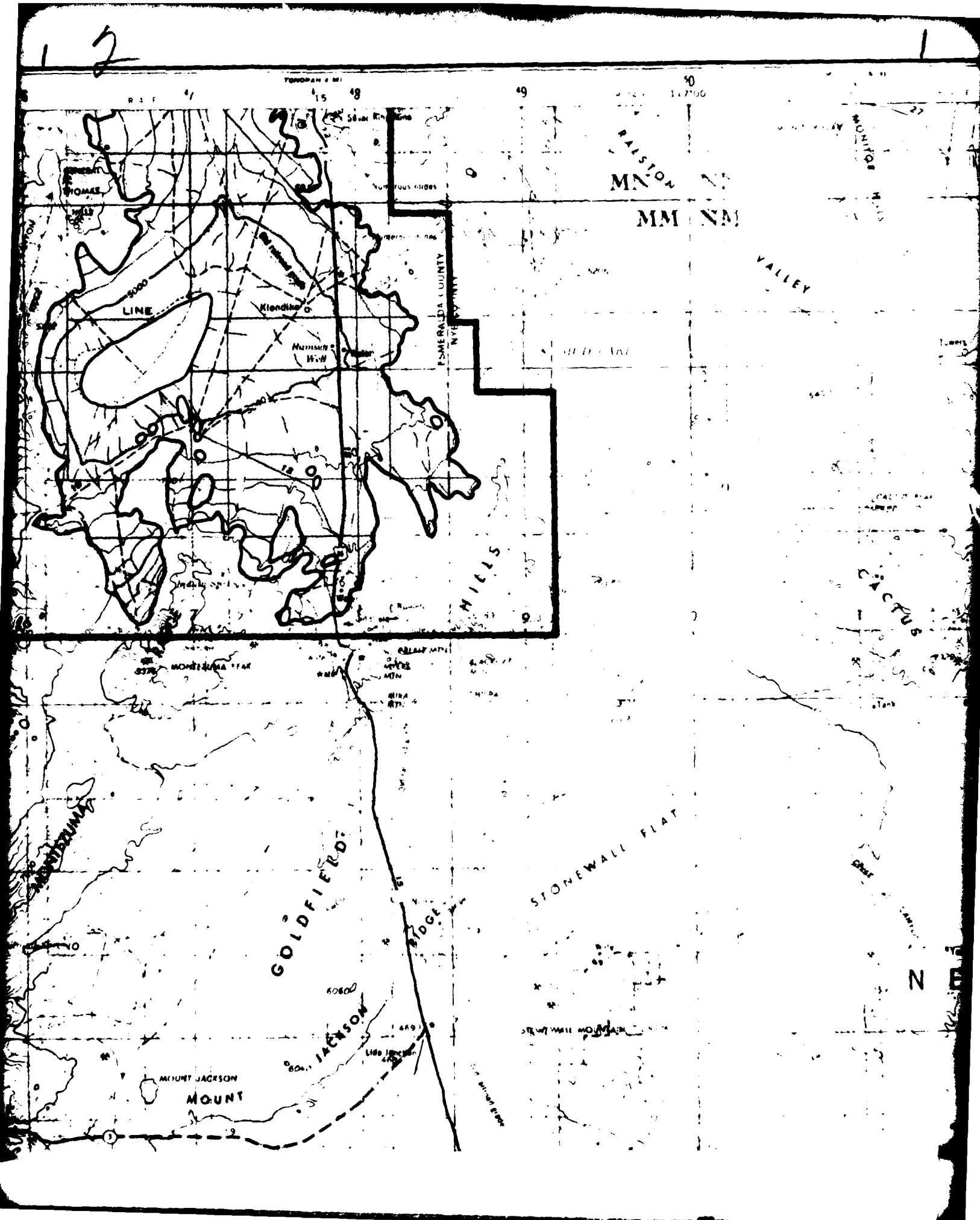
30 APR 81

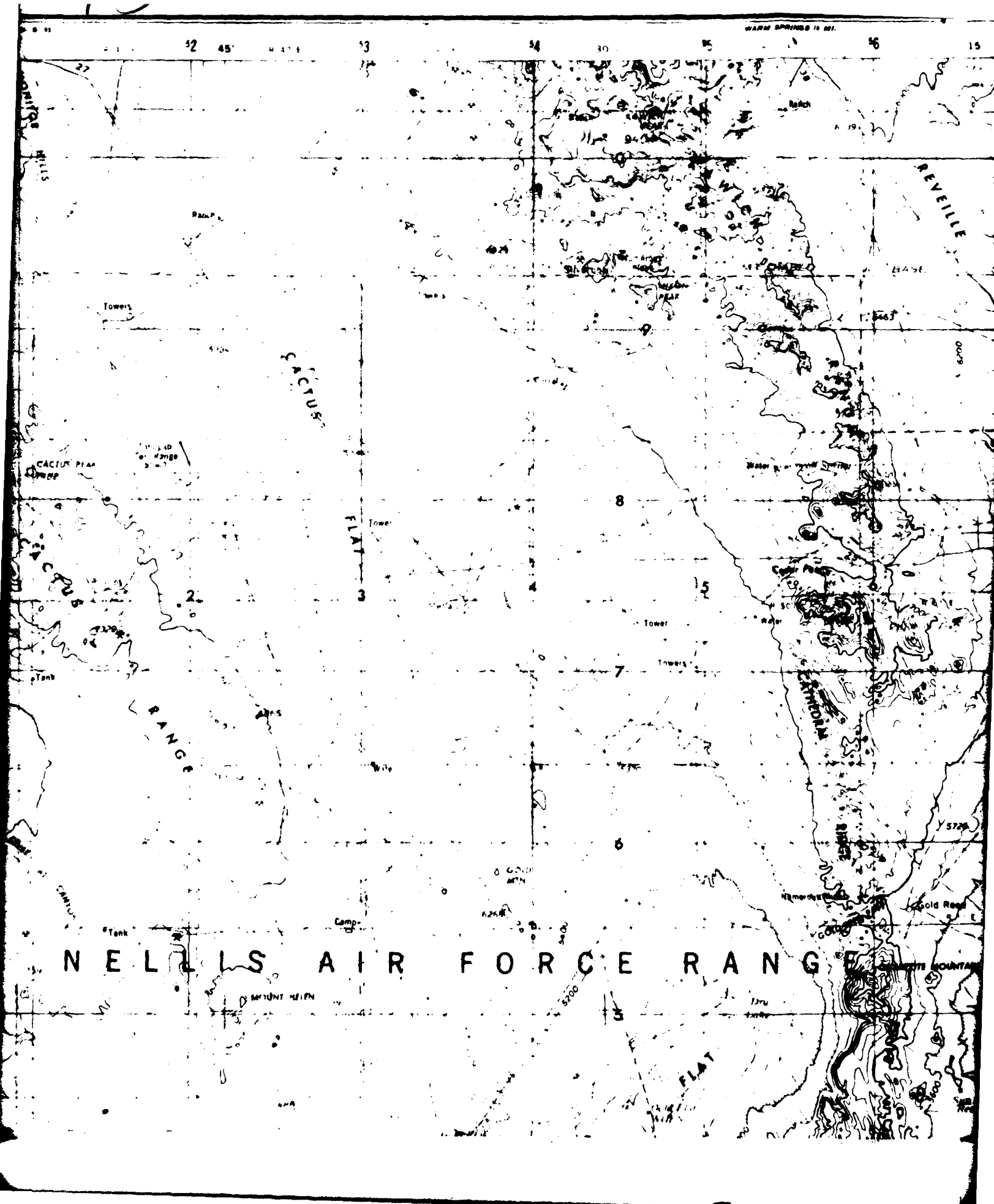
DRAWING 17



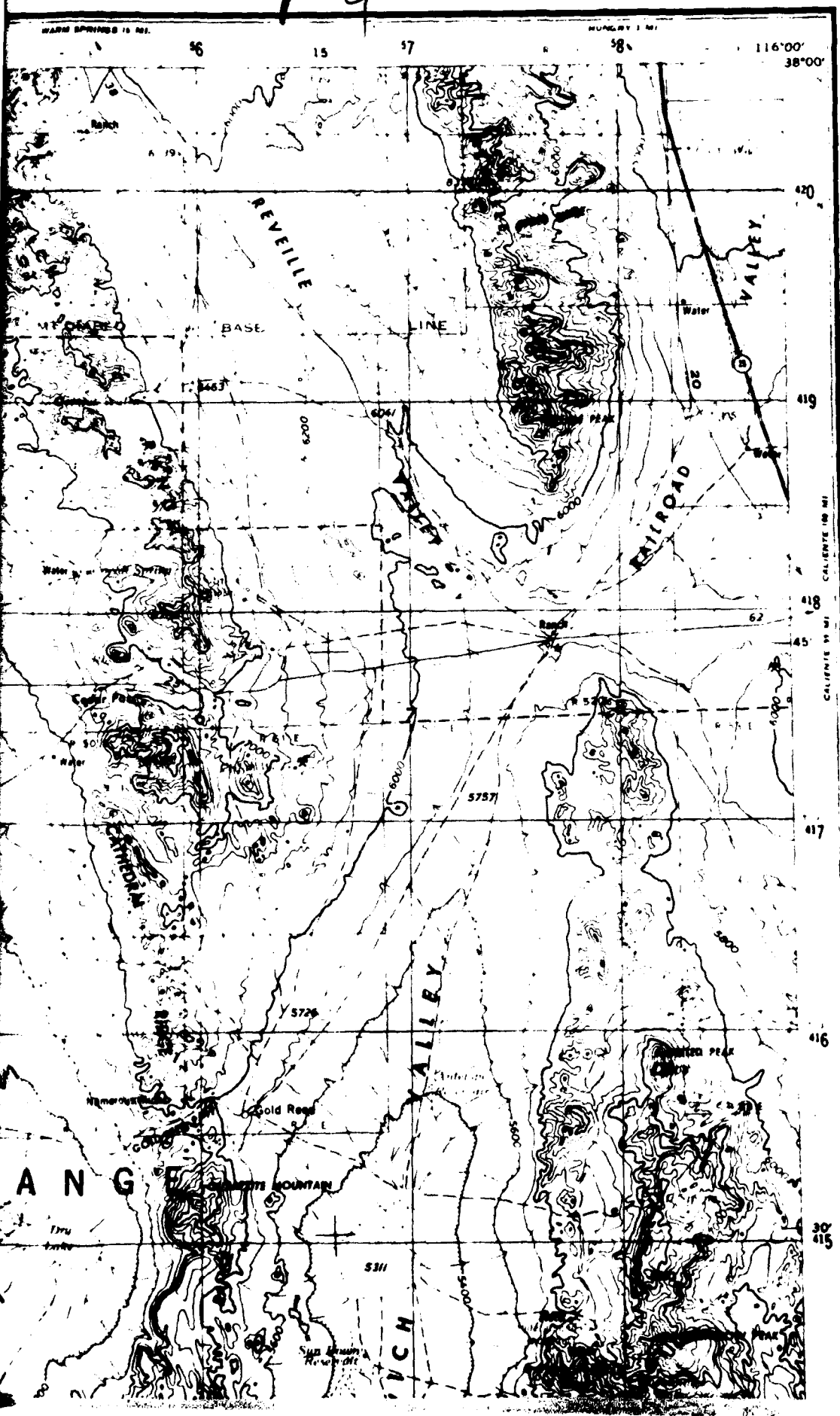


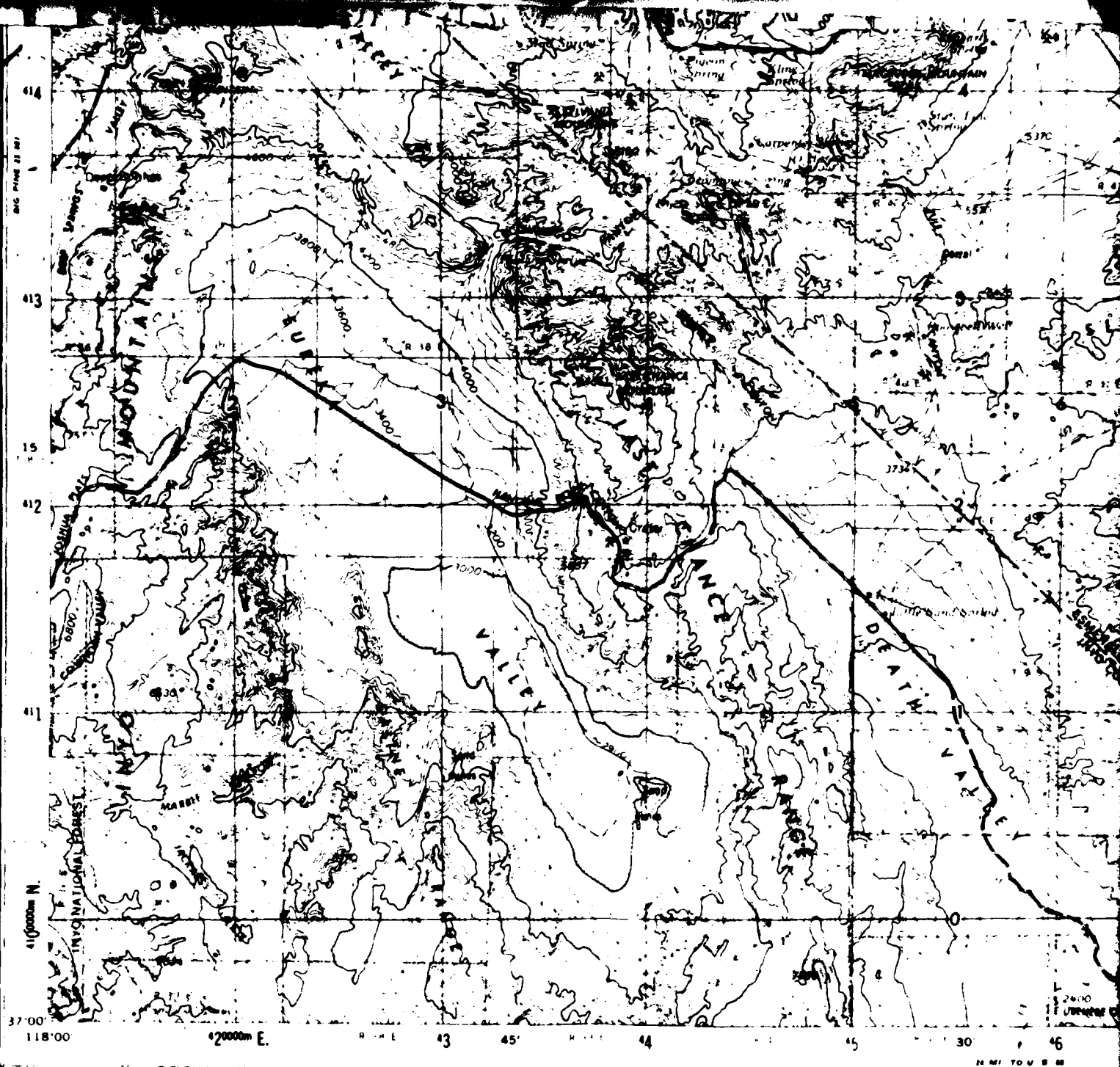






14



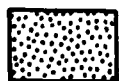


## GOLDFIELD 2<sup>nd</sup> QUADRANGLE

Base prepared by the U.S. Army Topographic Command, Washington, D.C.



OIL AND GAS LEASES



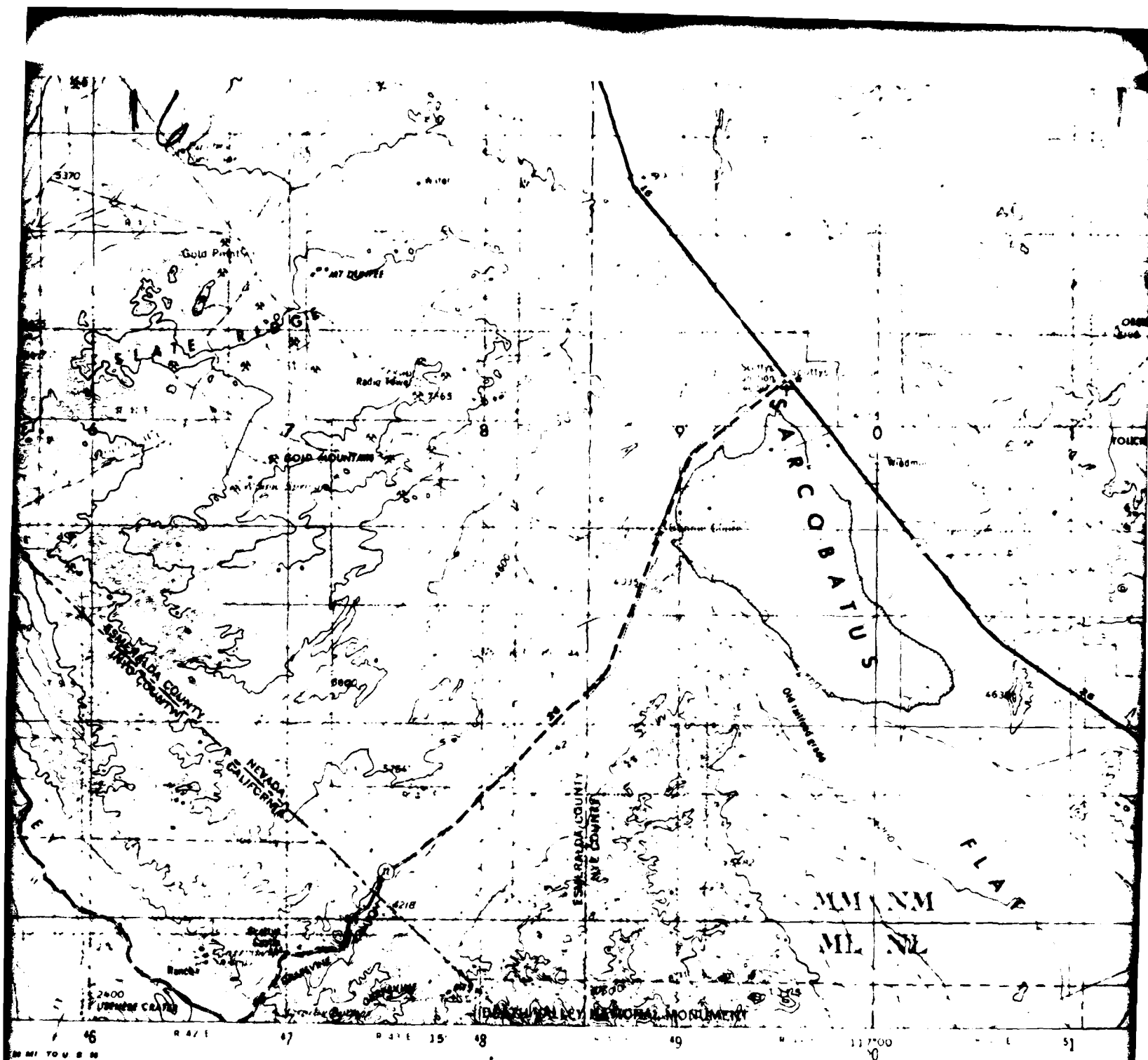
GEOTHERMAL LEASES



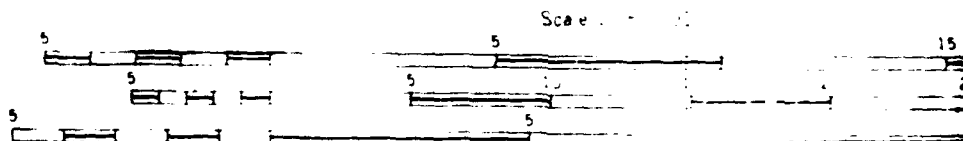
MX ADDITIONAL VALLEY MINERAL  
RESOURCES SURVEY STUDY AREA  
BOUNDARY SEPTEMBER 26, 1980



MX DEPLOYMENT AREA



Y MINERAL  
UDY AREA  
R 26, 1980

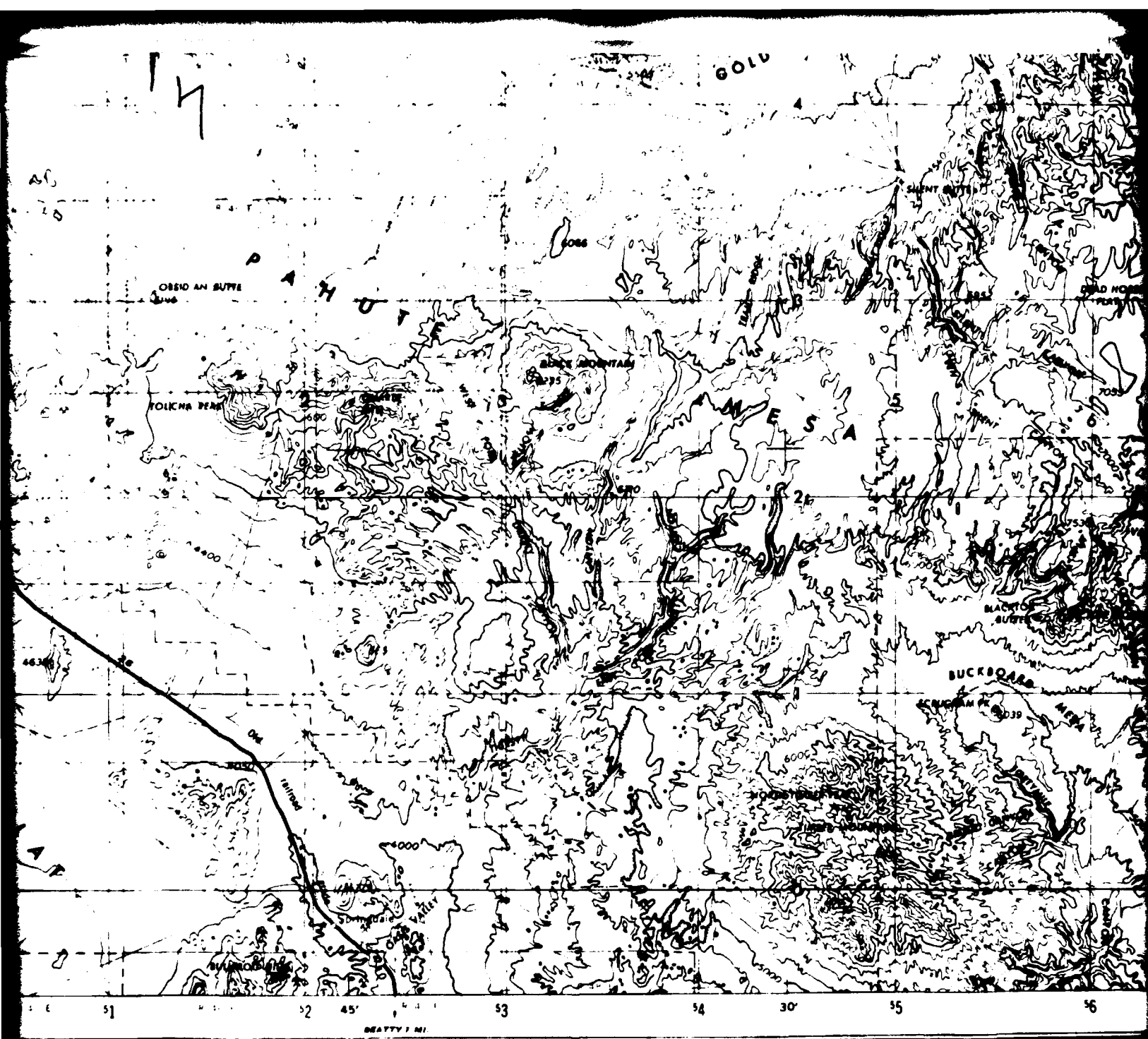


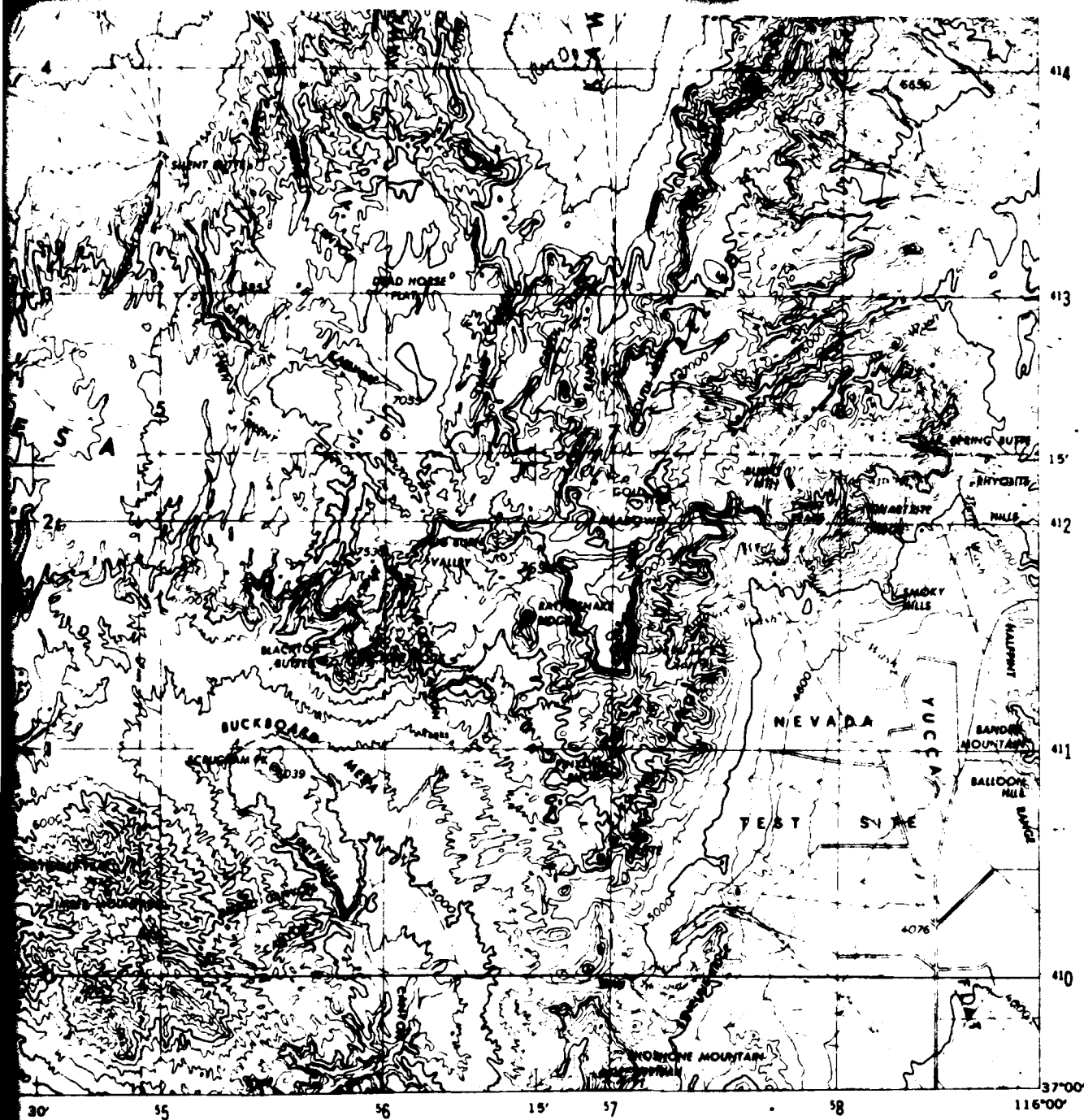
CONTOUR INTERVAL 2 FEET  
WITH SUPPLEMENTARY CONTOURS AT 100 FEET INTERVALS  
TRANSVERSE MERCATOR PROJECTION

U.S. NAD 83 MERIDIAN LINES INDICATE THE 10 000 METER UNIVERSAL TRANSVERSE MERCATOR GRID  
MAGNETIC VARIATION FOR 1970 IS 10° 30' 280 MILS EAST OF TRUE IN THE ENTIRE AREA

NOTE: REFERENCE APPENDIX A-1 FOR  
DETAILED DESCRIPTION OF LEASE DATA.

DATA FROM: WOODWARD AND A





**Ertec**  
The Earth Technology Corporation

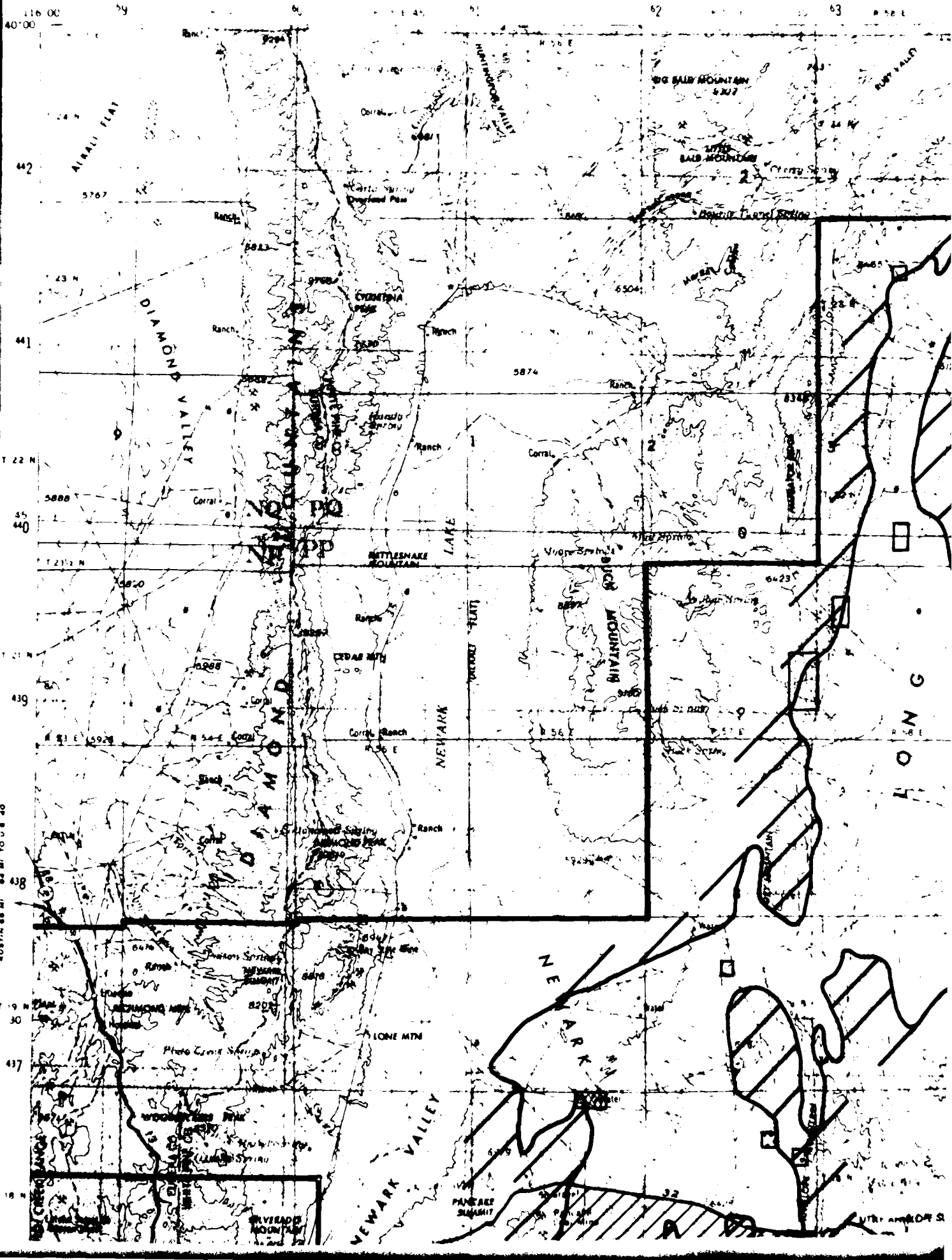
MX SITING INVESTIGATION  
DEPARTMENT OF THE AIR FORCE  
BMO/AFRCE-MX

## LAND STATUS-FEDERAL LEASES

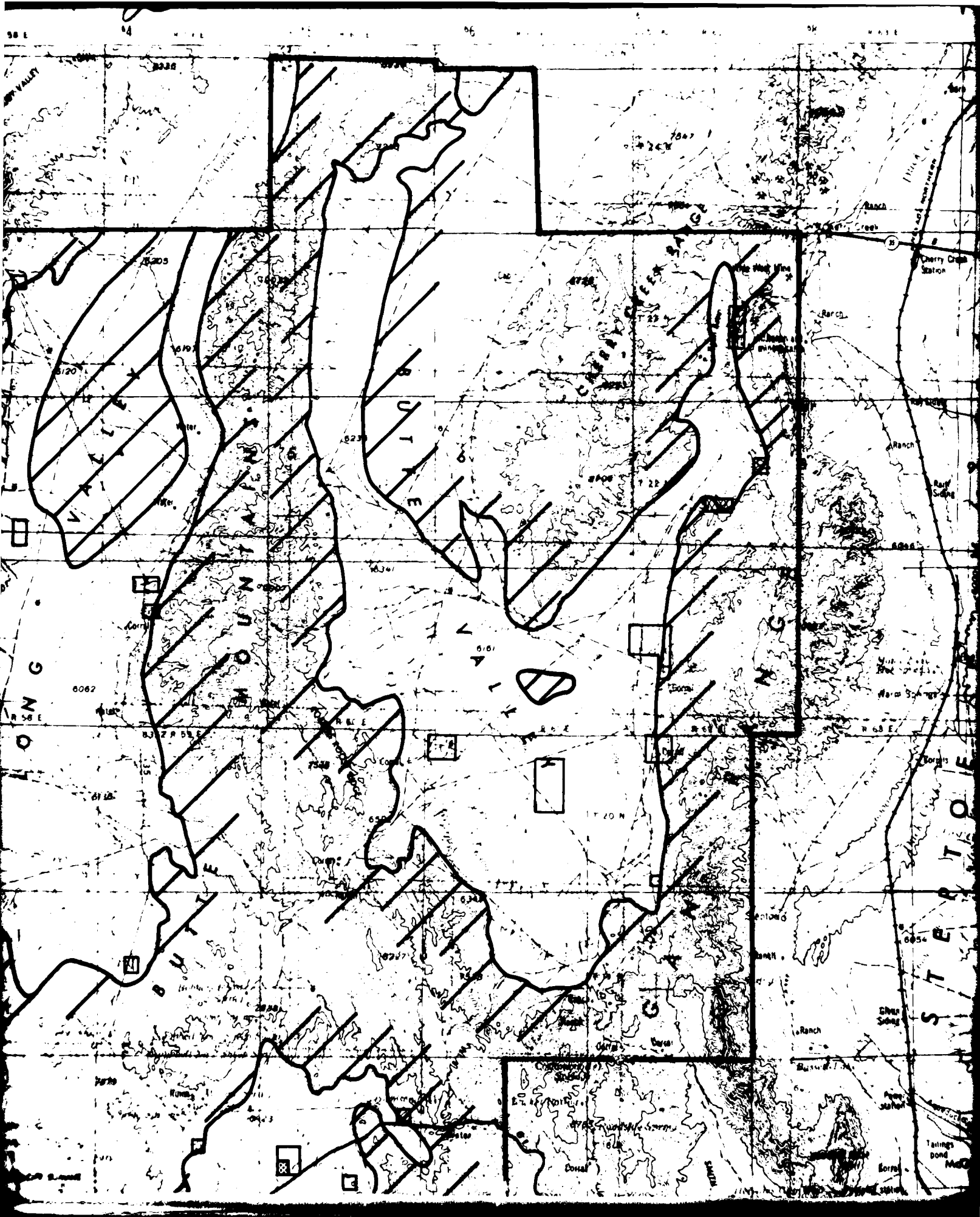
**MAP 4 OF 4**

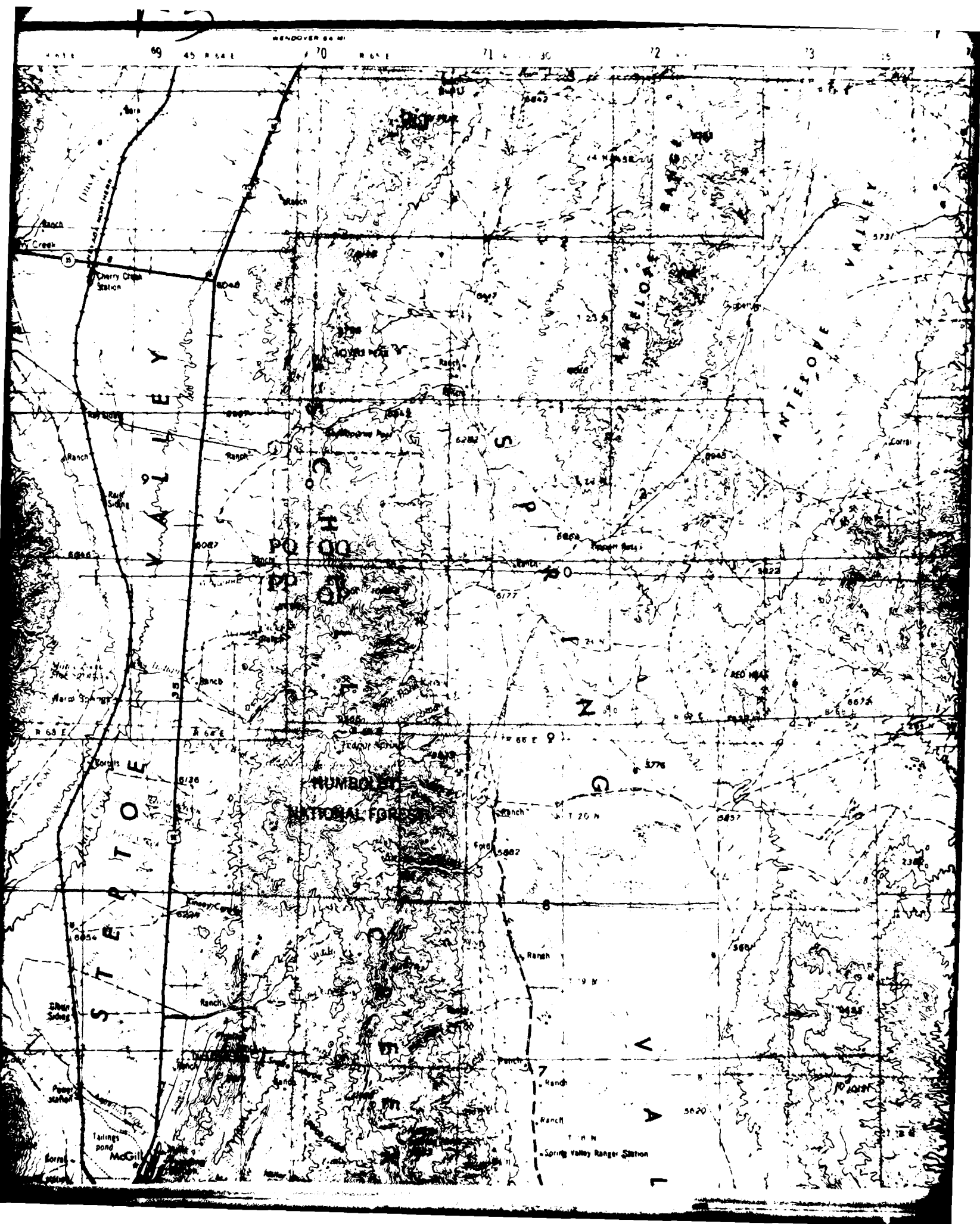
**30 APR 81**

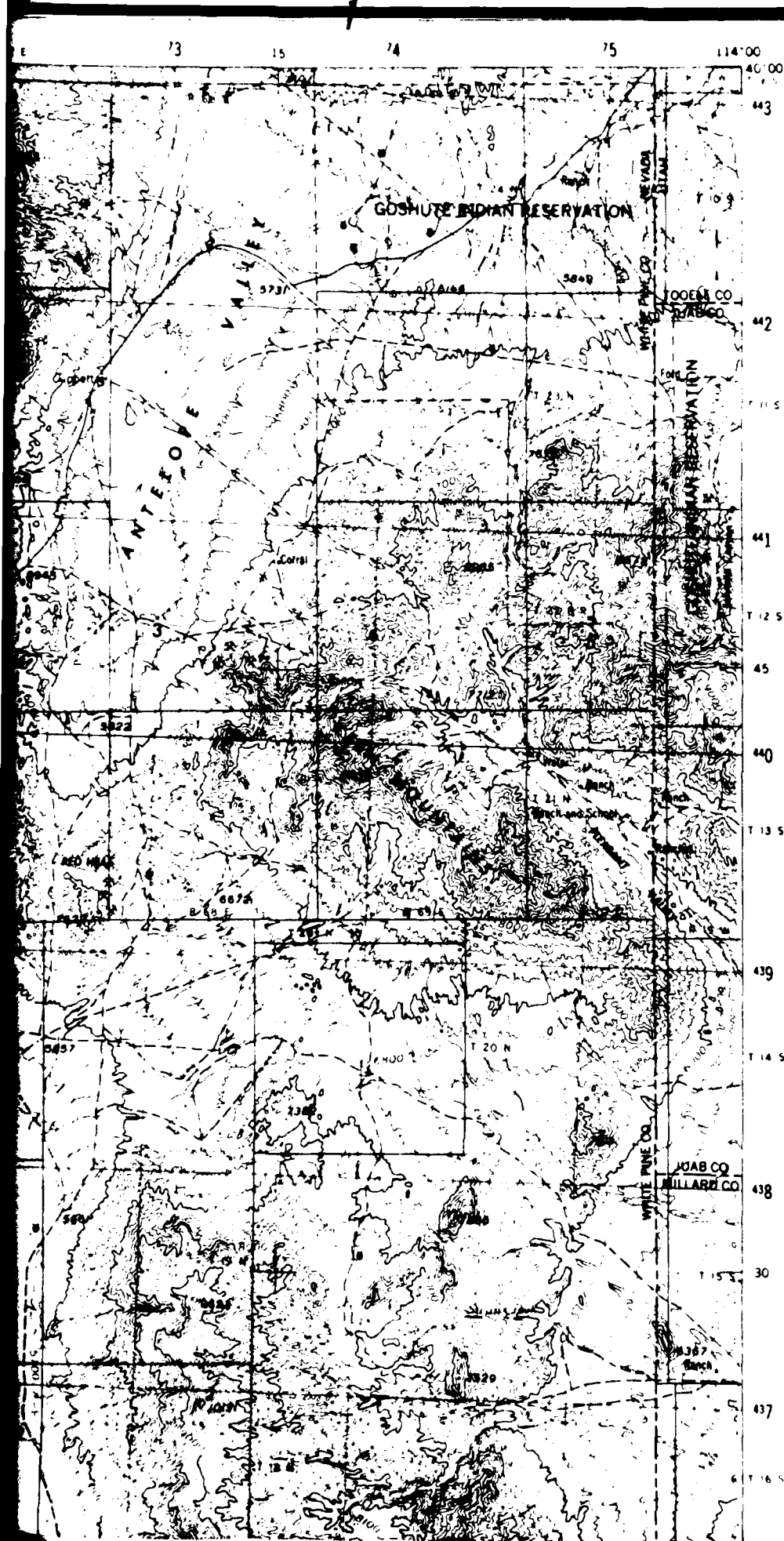
**DRAWING 17**



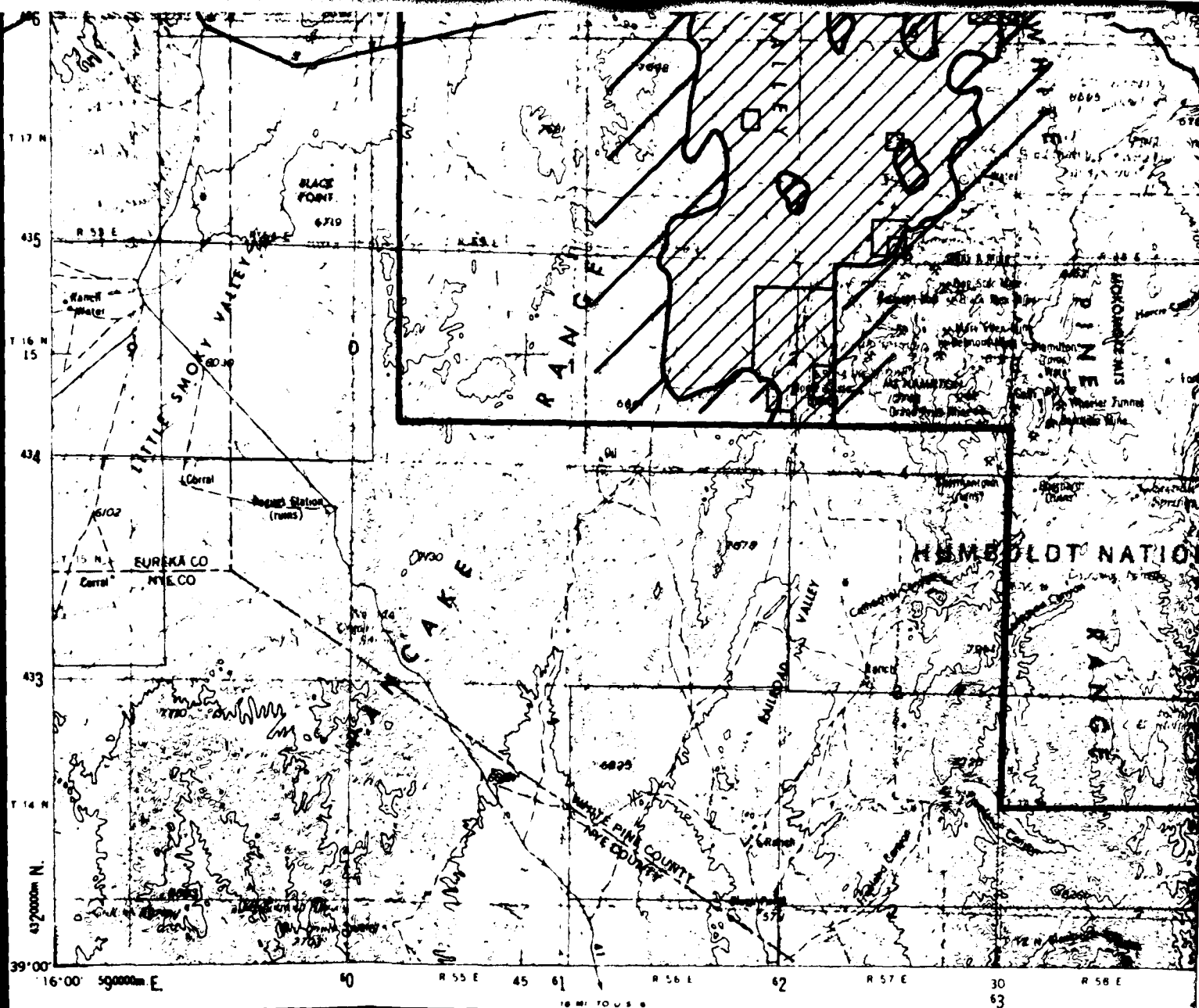








4



## ELY 2° QUADRANGLE

Base Prepared by the U.S. Army Topographic Command, Washington, D.C.

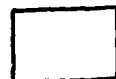
### EXPLANATION



FEDERAL LEASE LAND



NON FEDERAL FEE LAND



STATE LAND



MATERIAL SITE



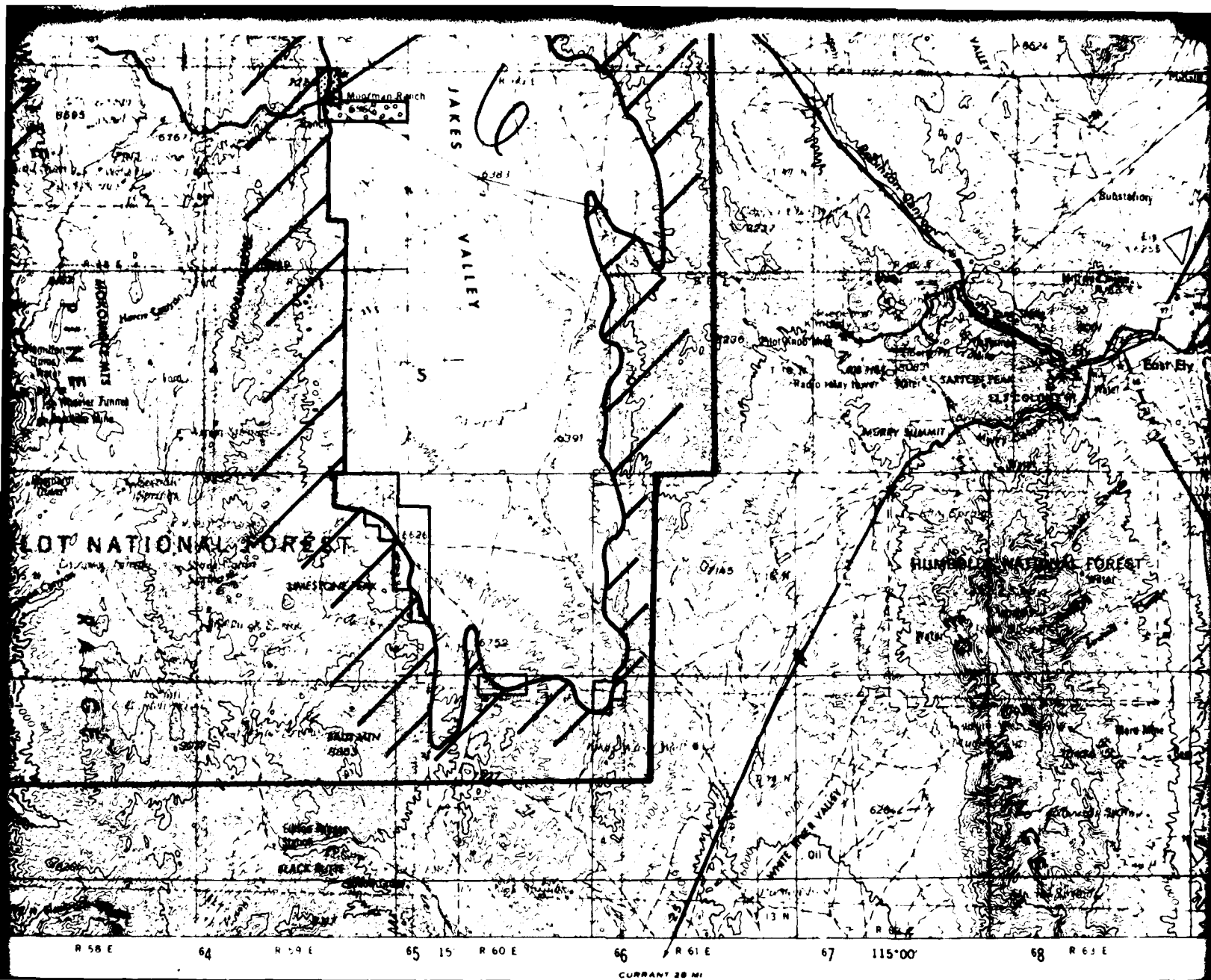
PATENTED MINING CLAIM

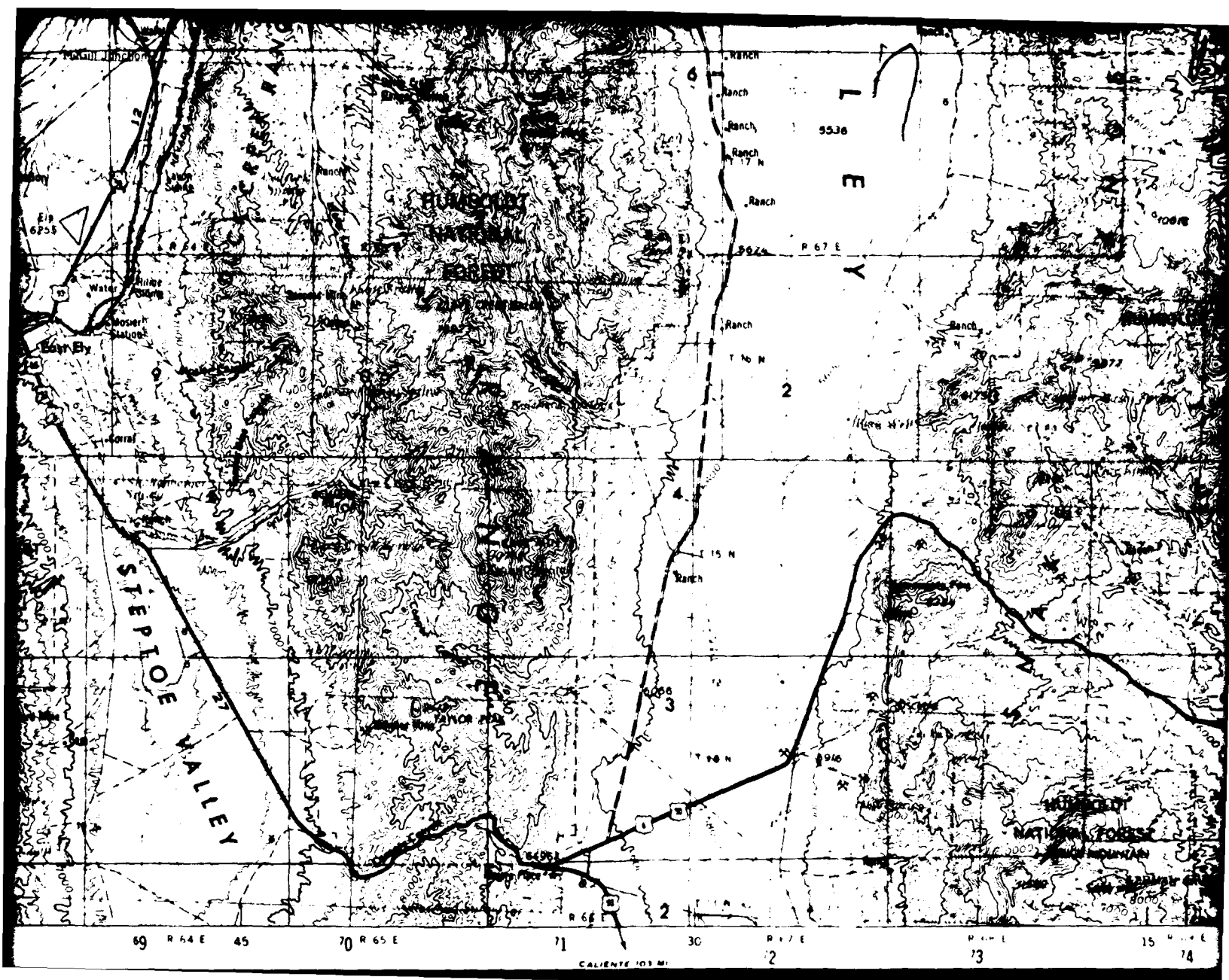


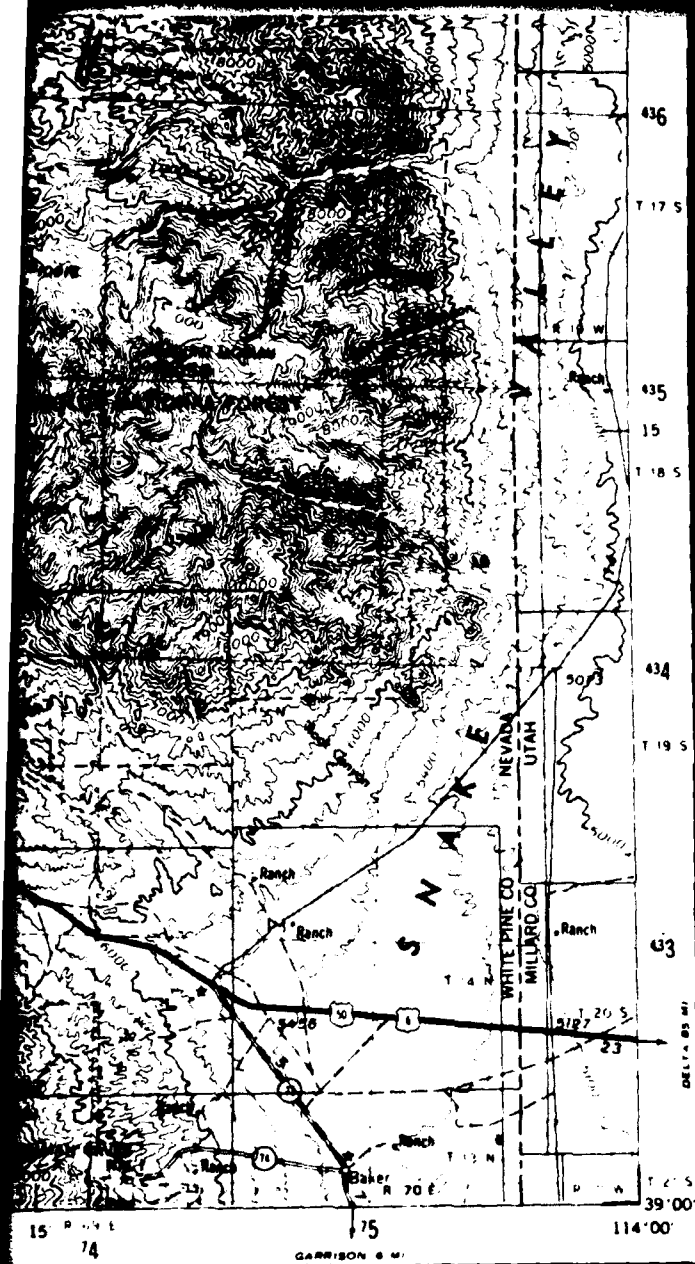
UNPATENTED MINING CLAIM



RECOMMENDED EXCLUSION







ONAL VALLEY MINERAL  
S SURVEY STUDY AREA  
Y SEPTEMBER 26, 1980

YMENT AREA

**ec**  
Corporation

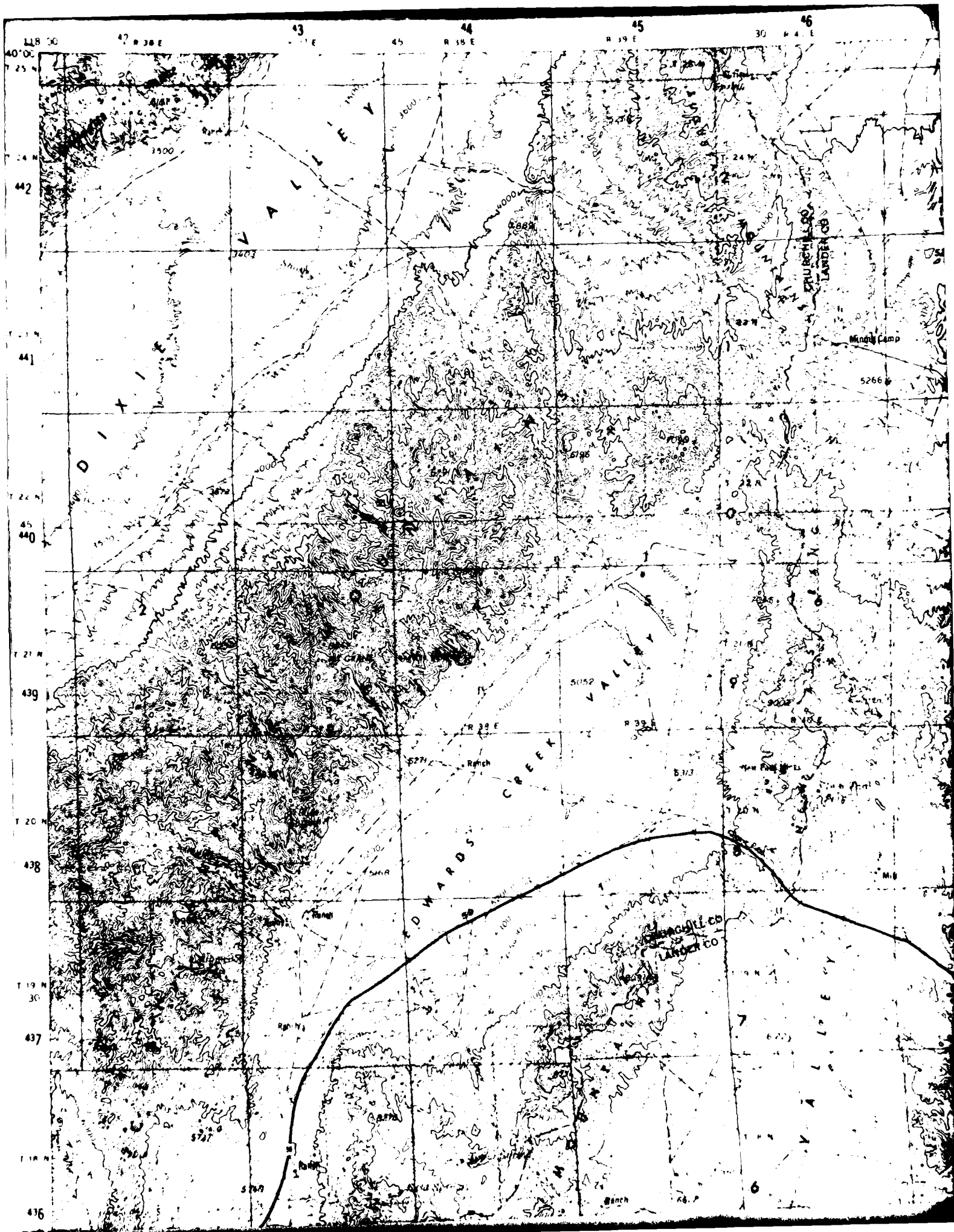
MX SITING INVESTIGATION  
DEPARTMENT OF THE AIR FORCE  
BMO/AFRCE-MX

ATUS-NONFEDERAL LAND AND  
PATENTED MINING CLAIMS

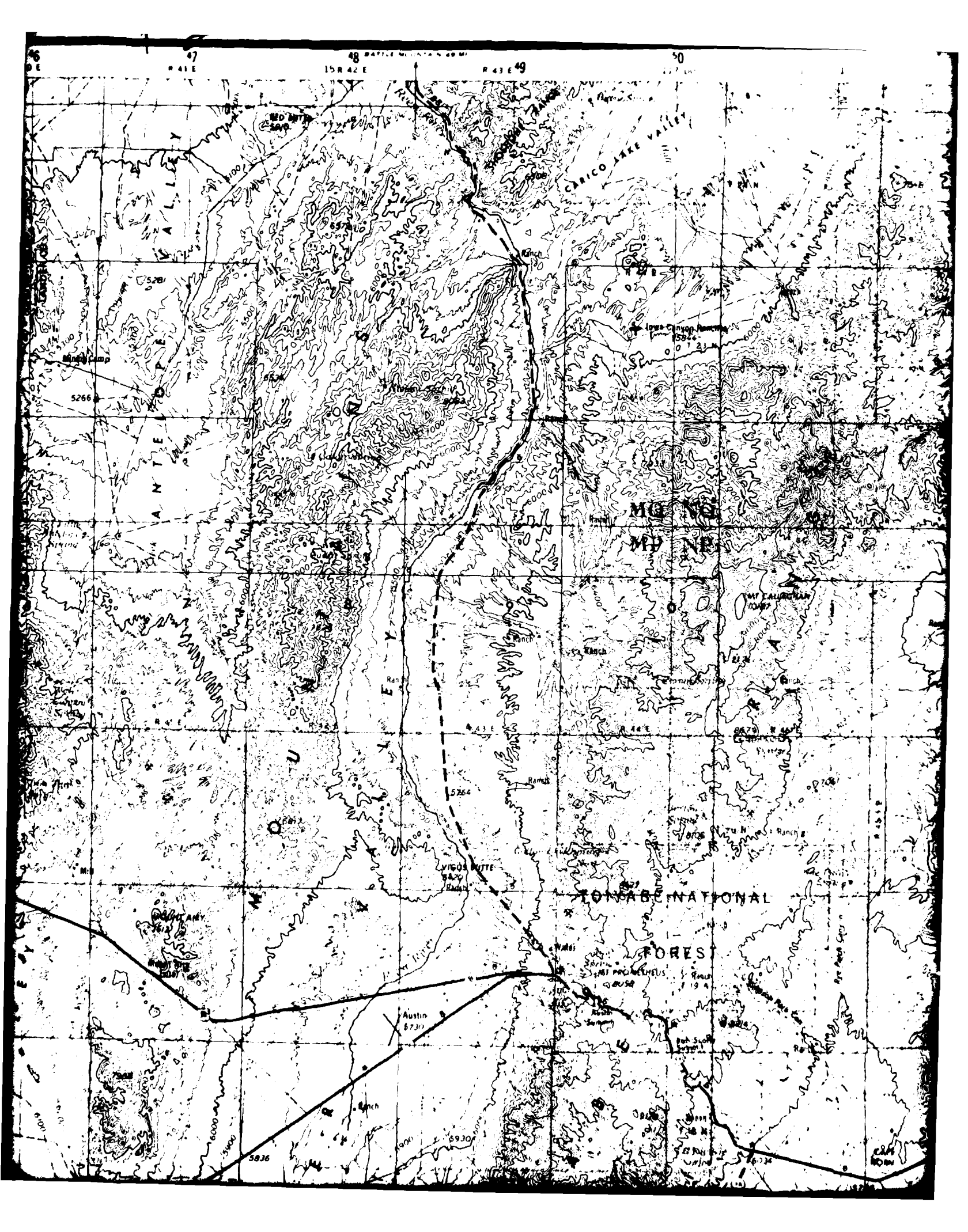
MAP 1 OF 4

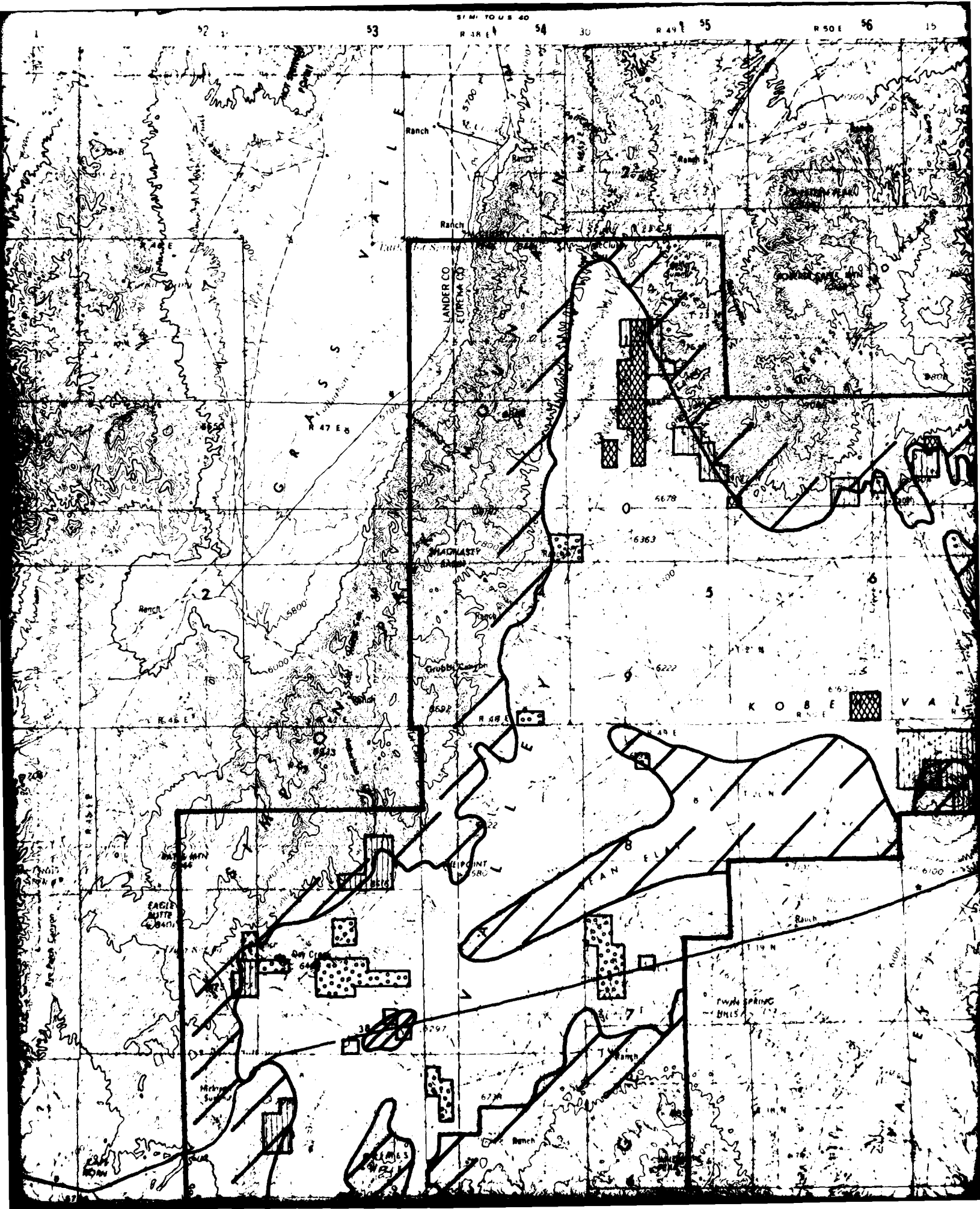
DRAWING 18

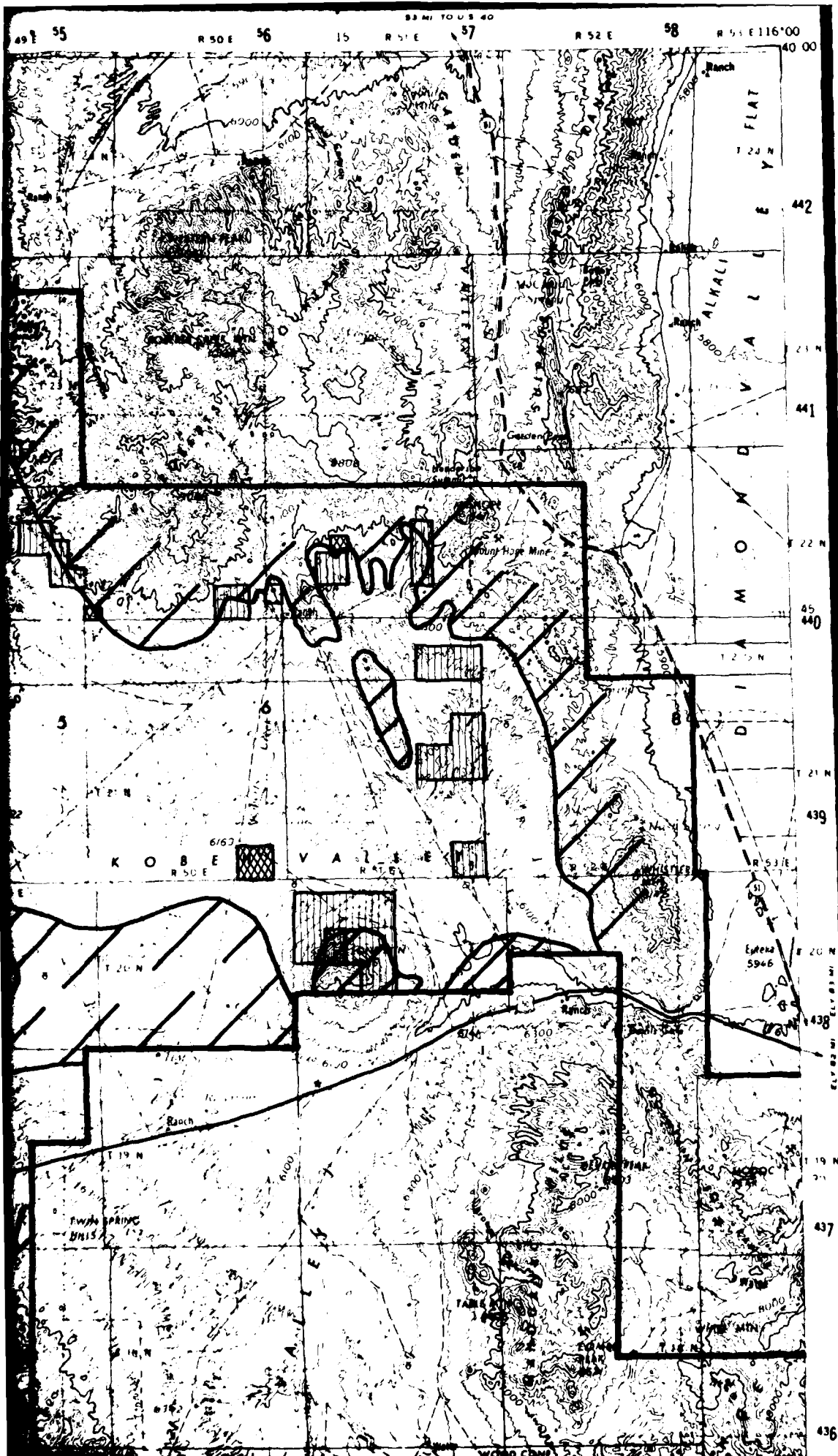


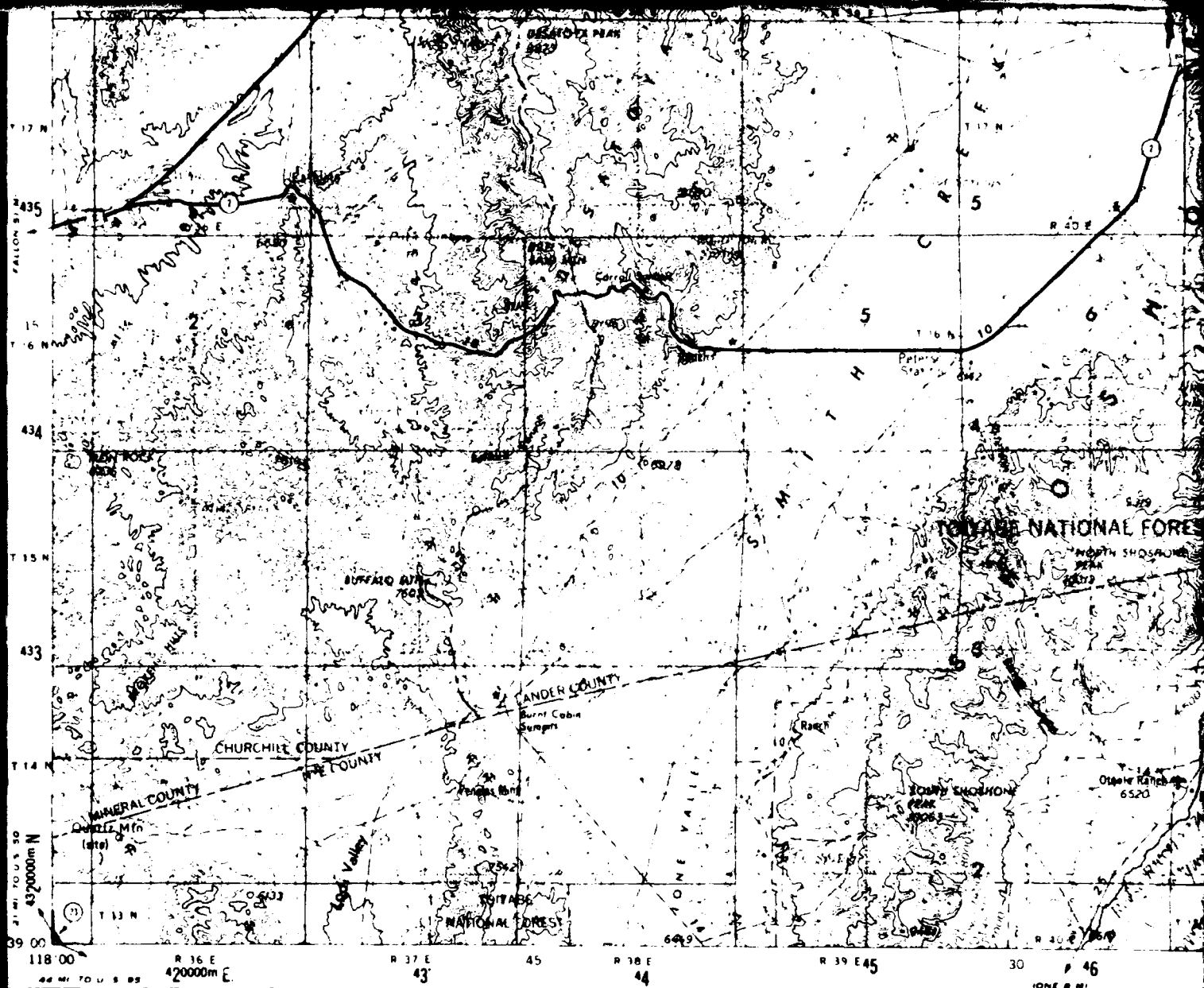












## MILLETT 2° QUADRANGLE

Base Prepared by the U.S. Army Topographic Command, Washington, D.C.

### EXPLANATION



FEDERAL LEASE LAND



NON FEDERAL FEE LAND



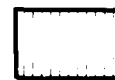
STATE LAND



MATERIAL SITE



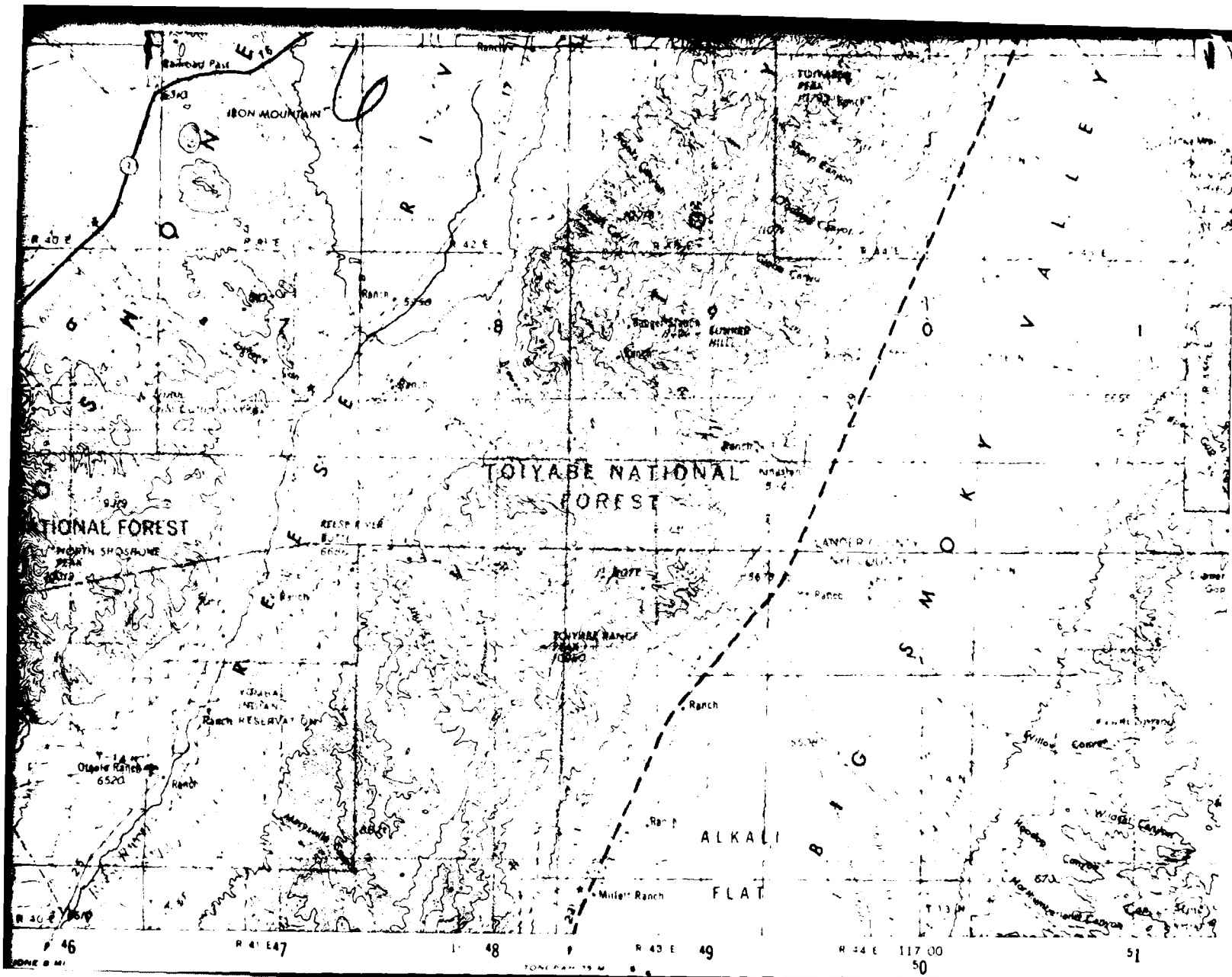
PATENTED MINING CLAIM

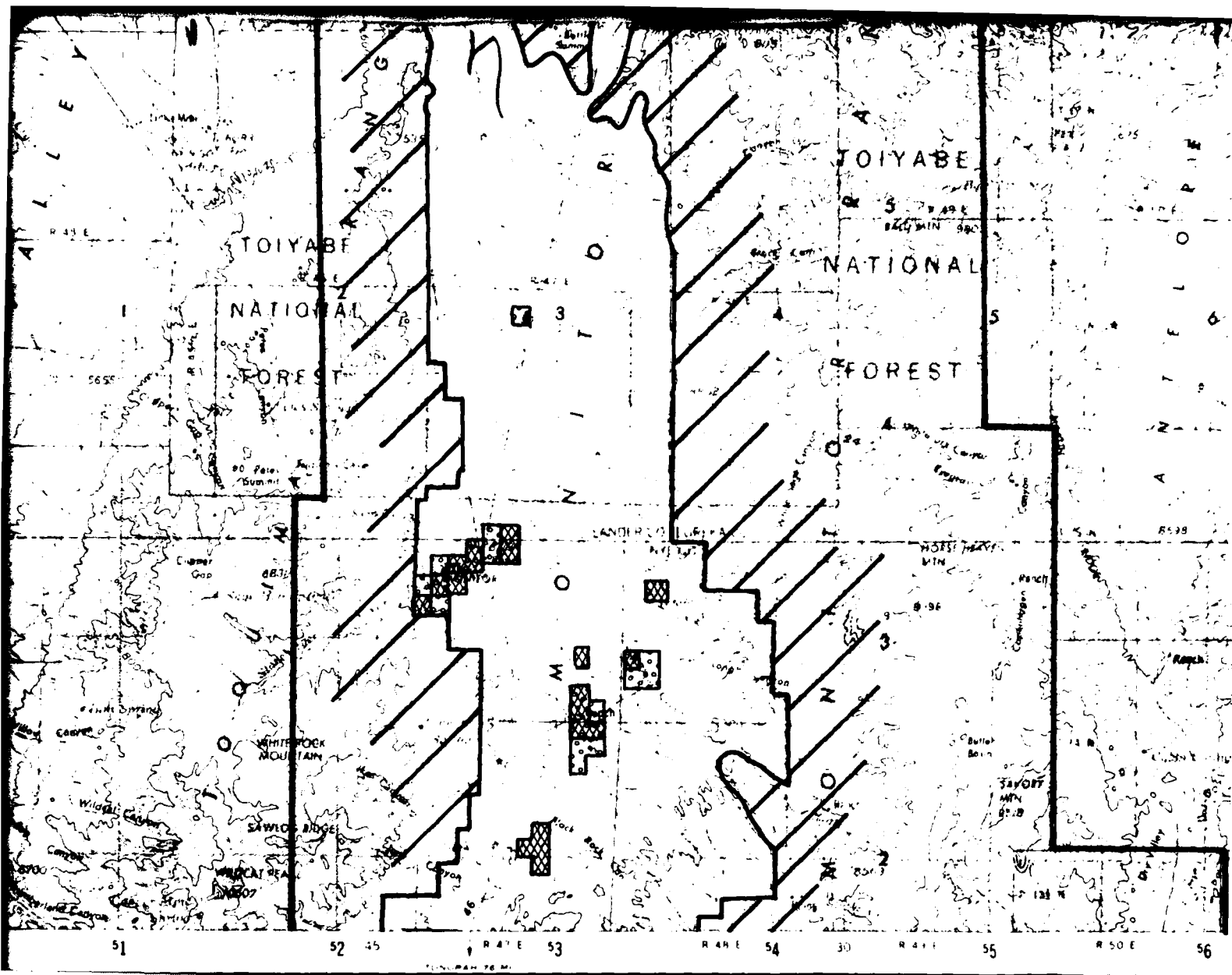


UNPATENTED MINING CLAIM



RECOMMENDED EXCLUSION





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ERTEC WESTERN INC. LONG BEACH CA

F/6 8/7

MX SITING INVESTIGATION. MINERAL RESOURCES SURVEY, SEVEN ADDITI--ETC(U)

JUN 81

F04704-80-C-0006

UNCLASSIFIED

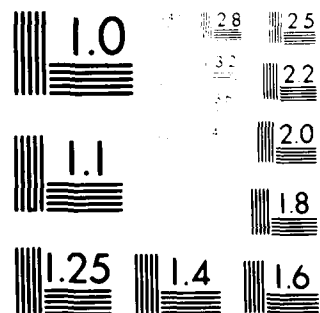
E-TR-50-VOL-4

NL

2 of 2

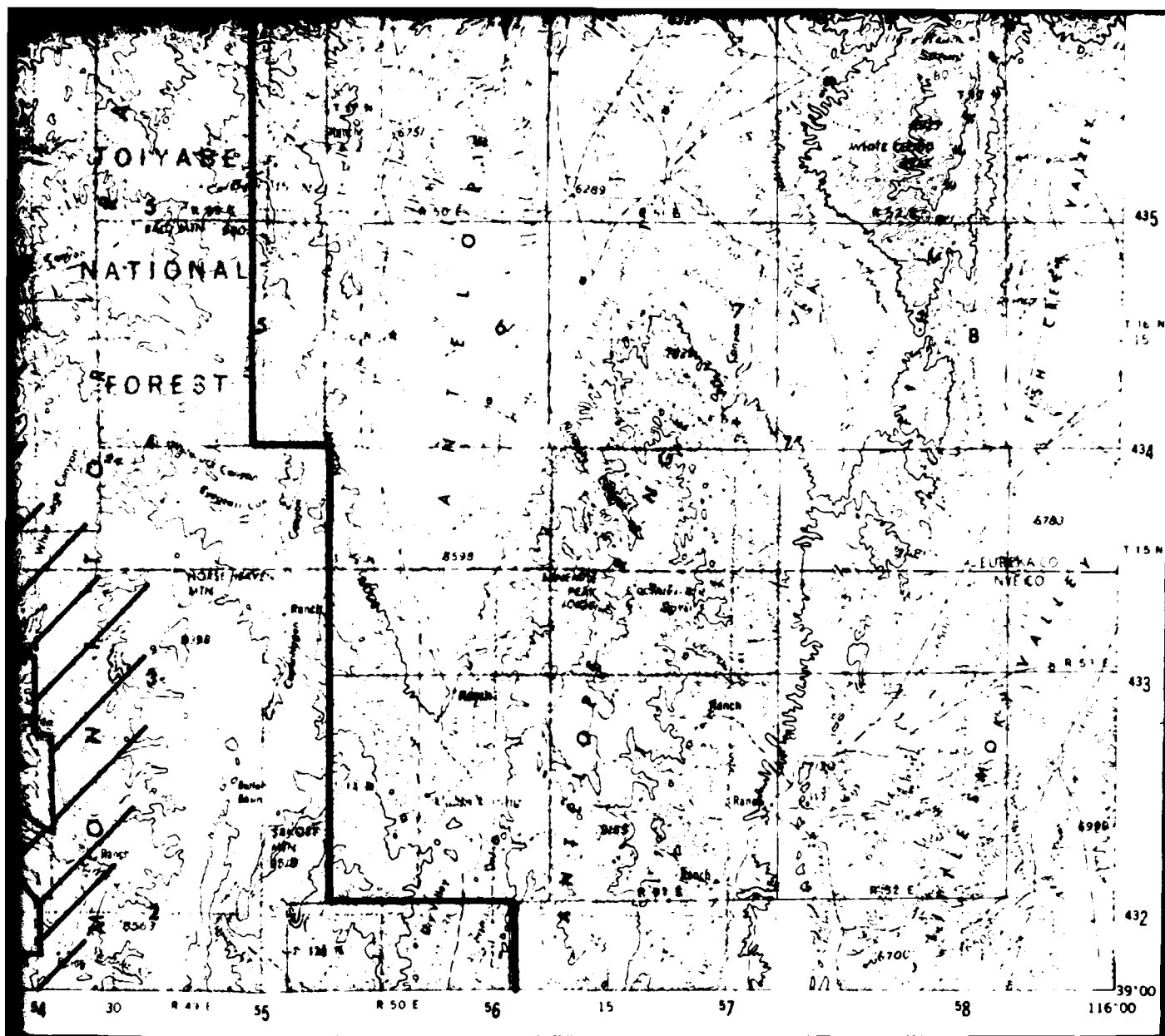
ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED

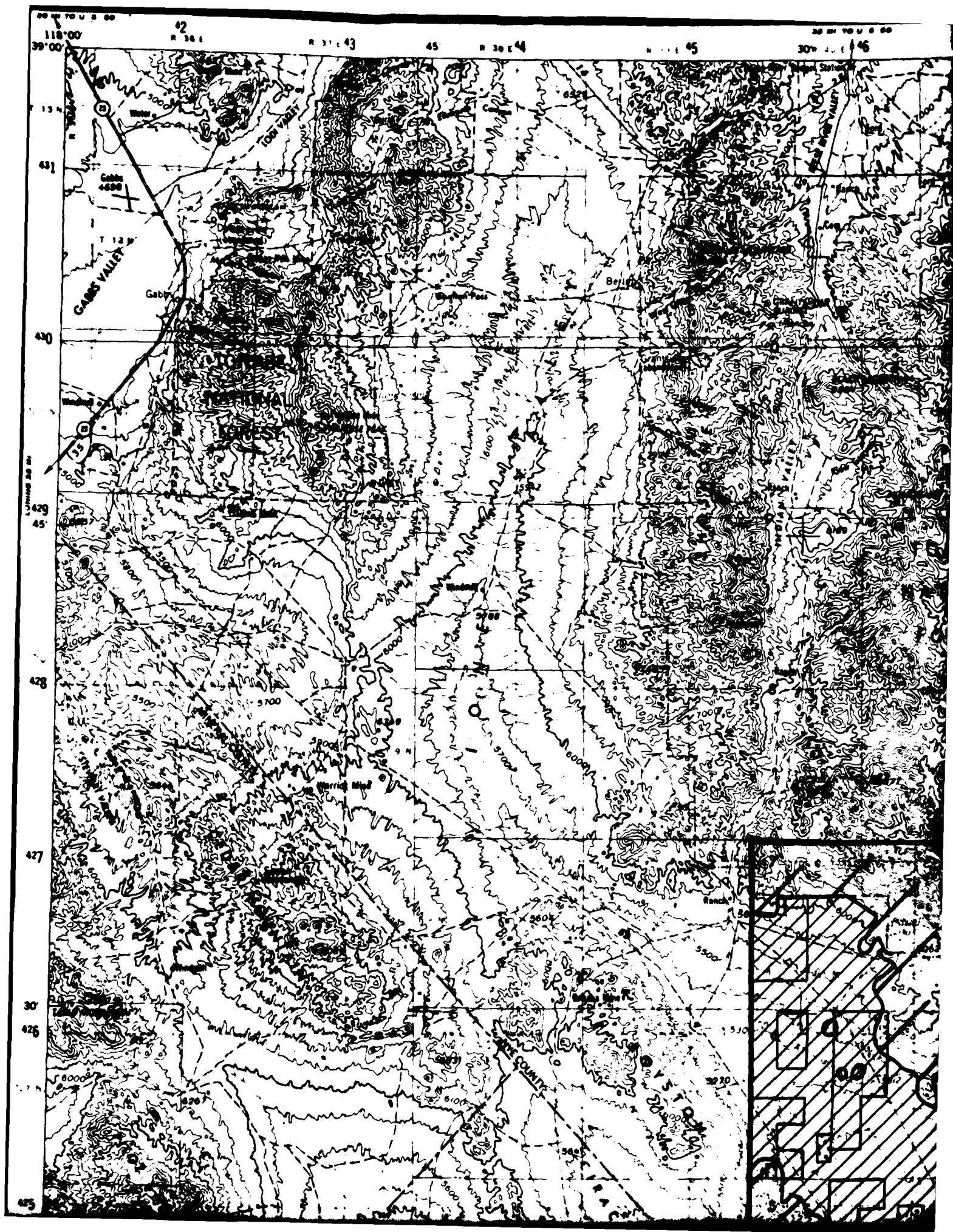


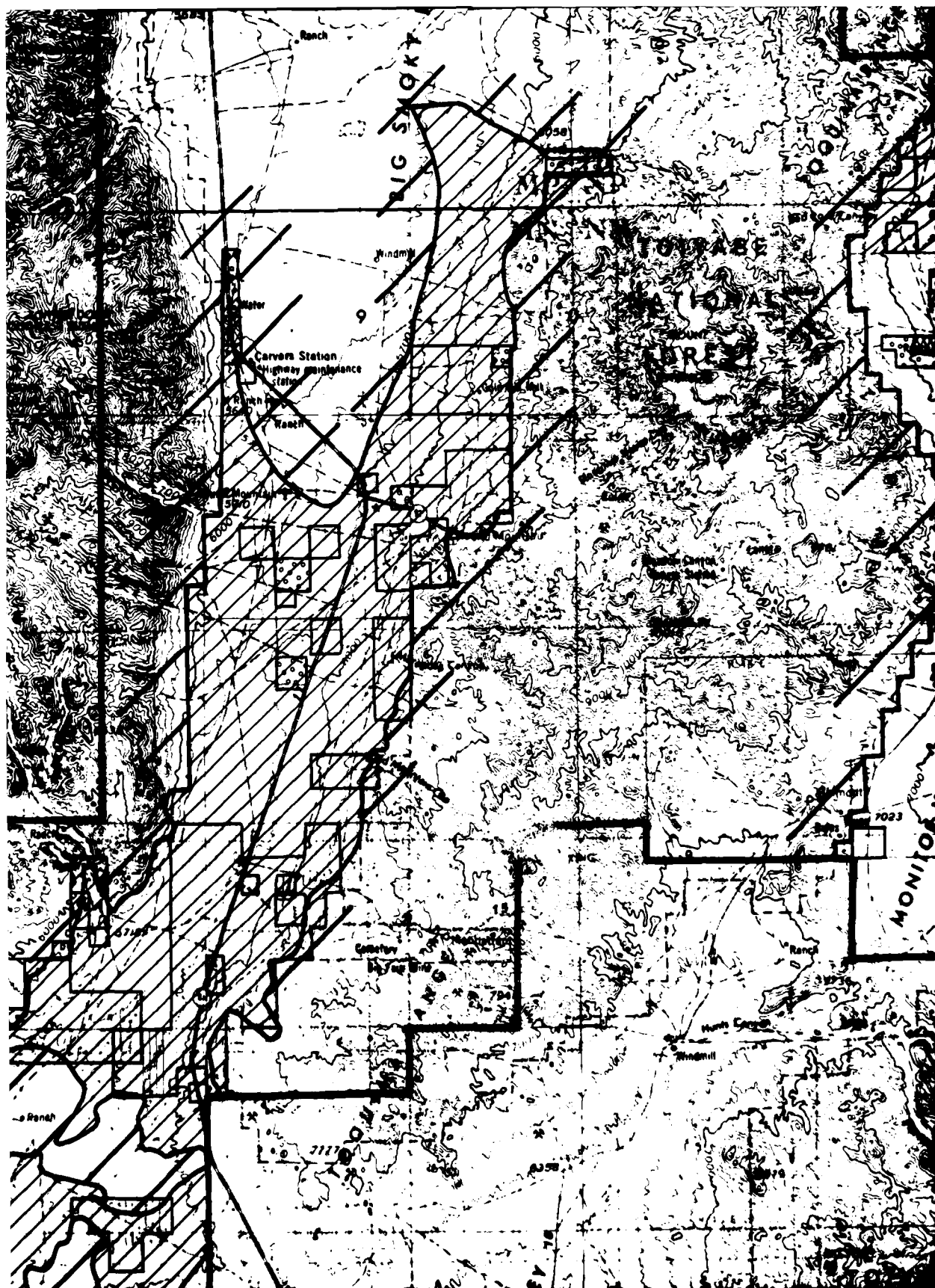


MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A









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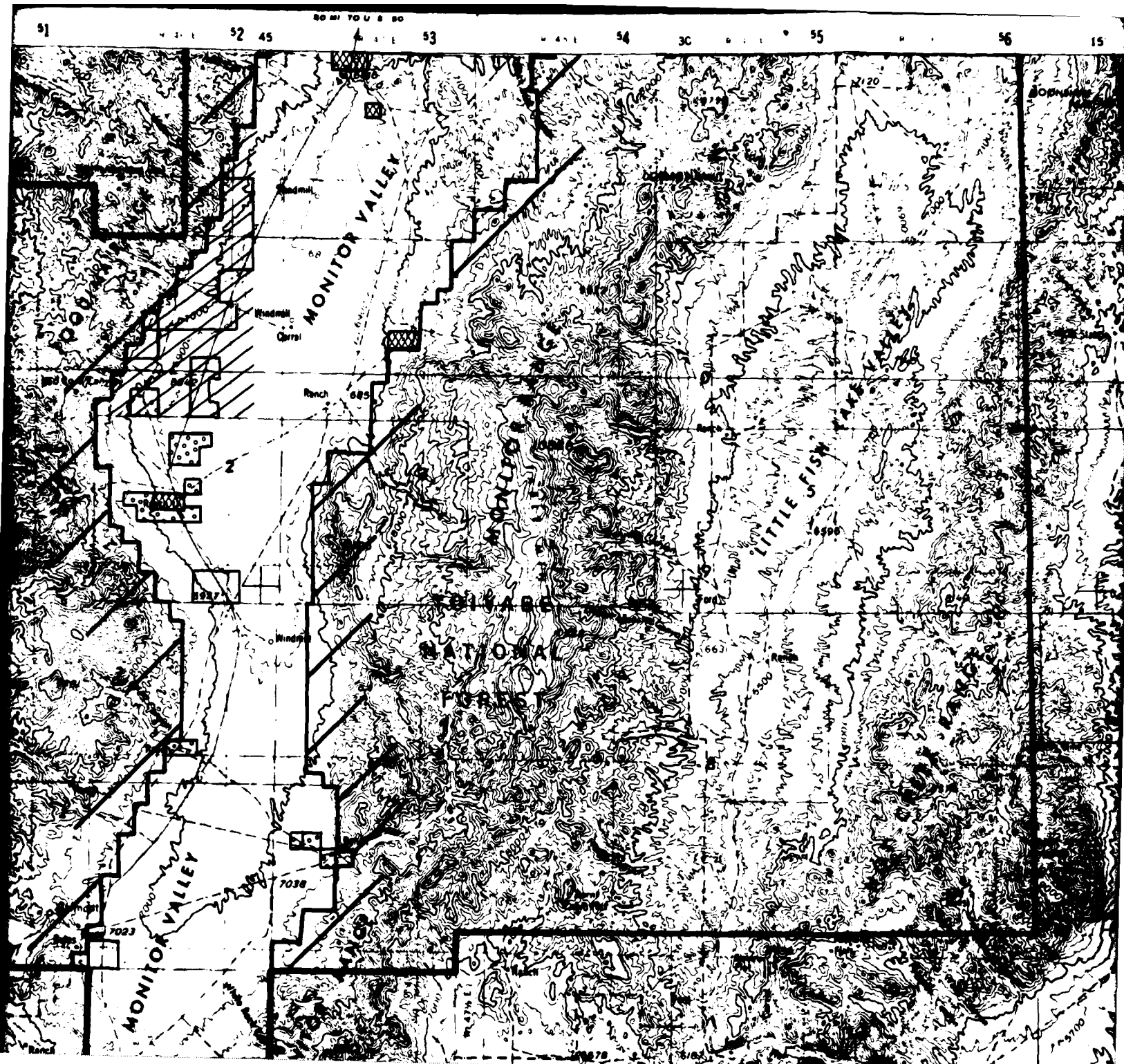
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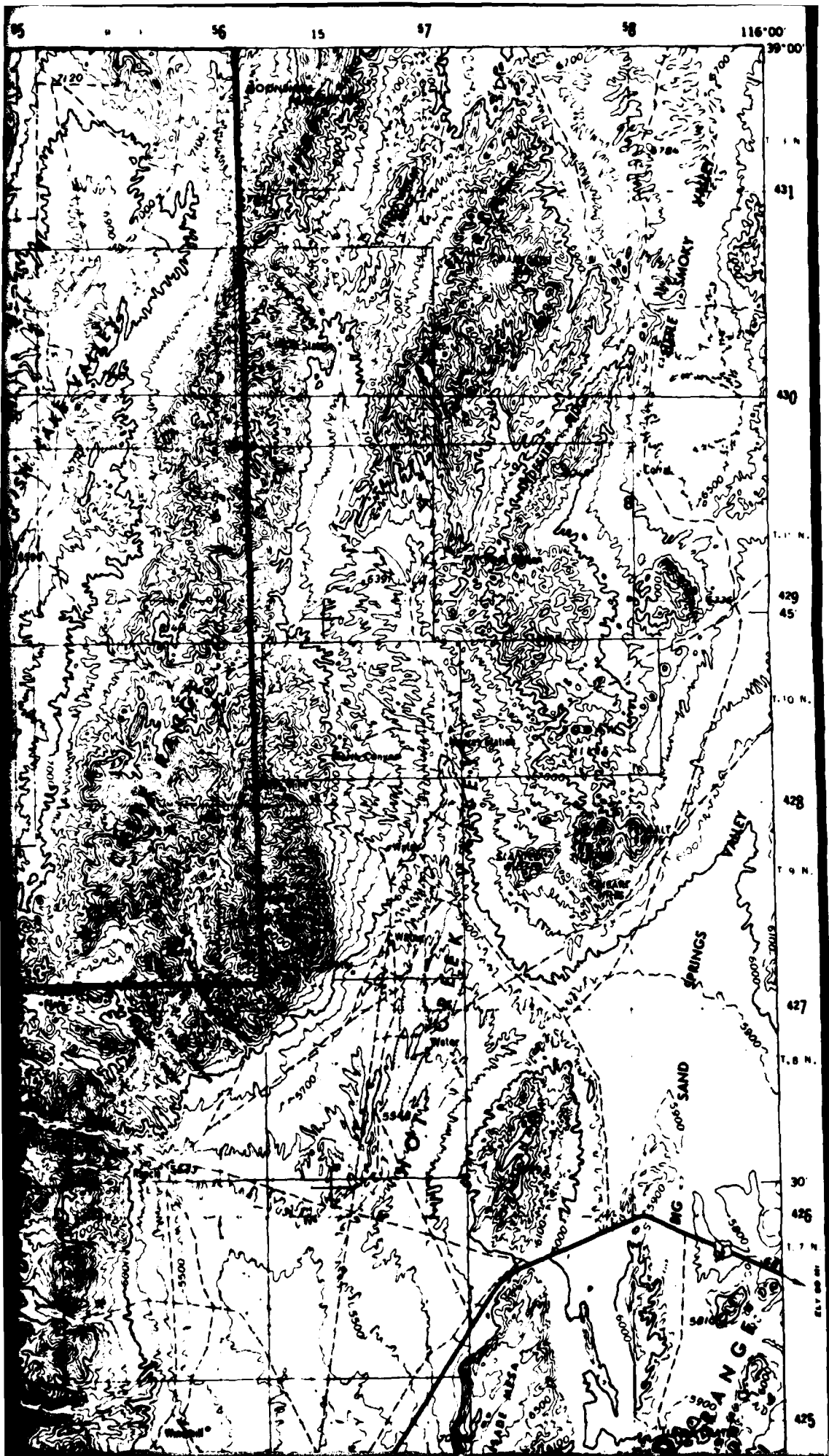
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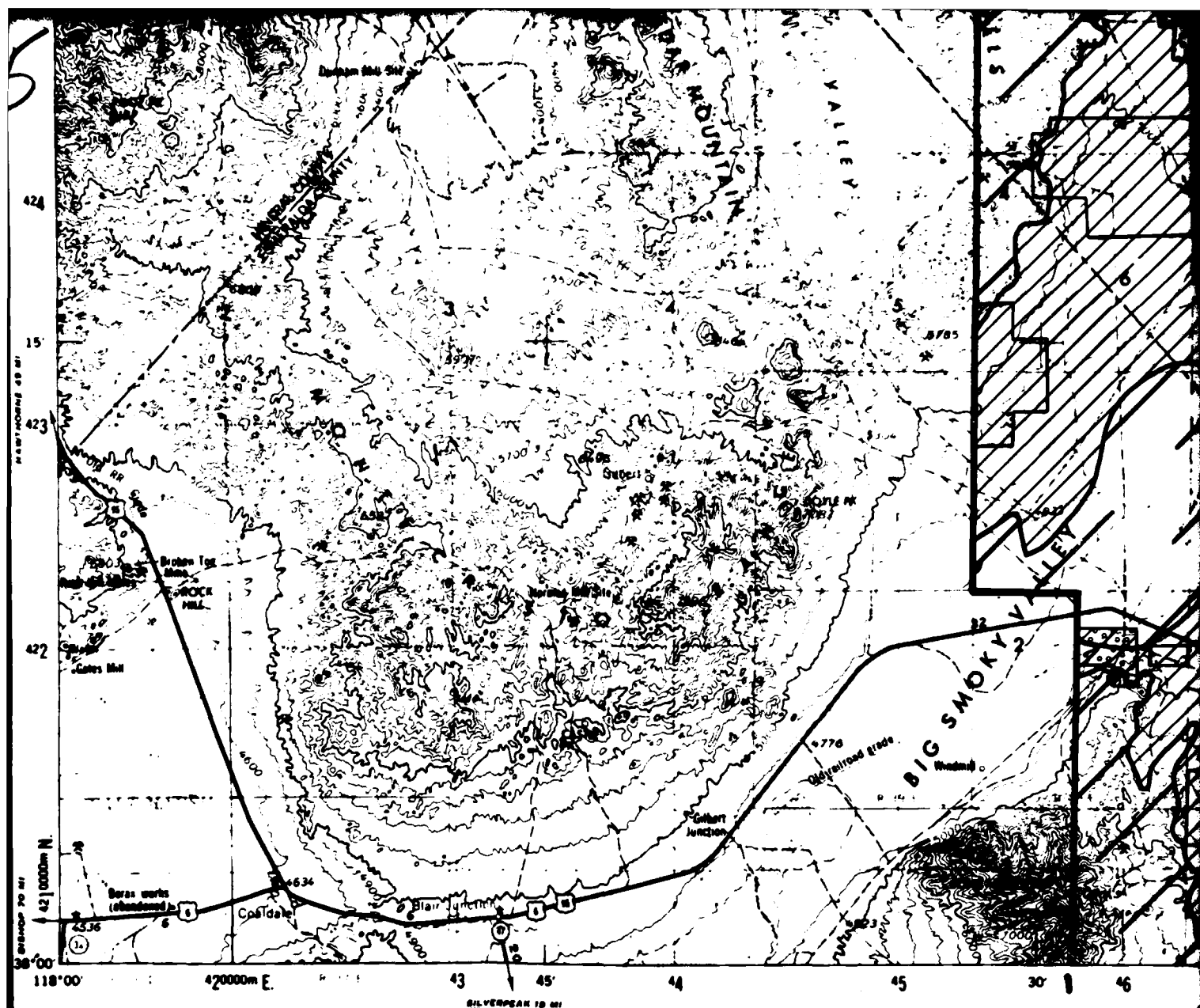
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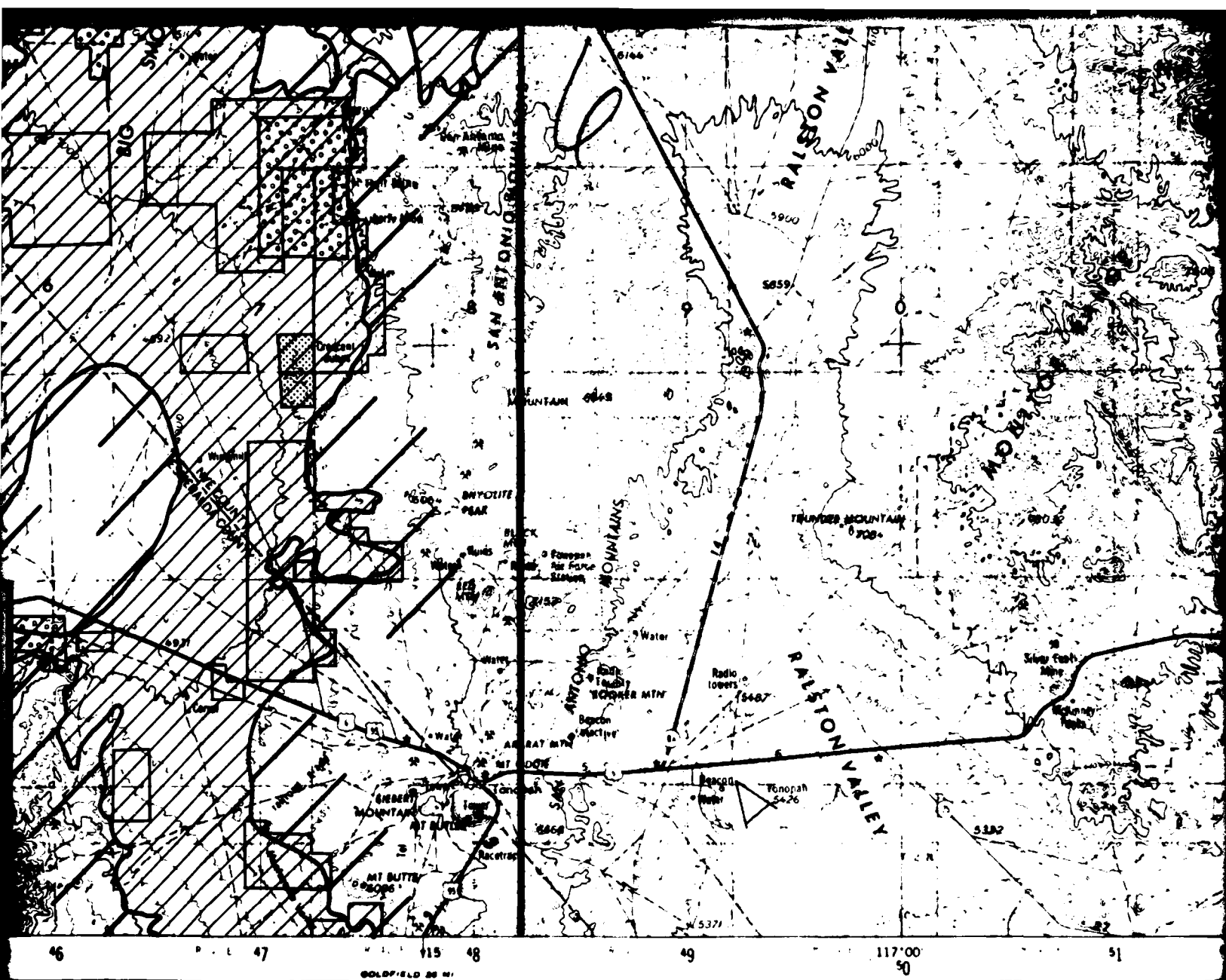
80 MI TO U & 80

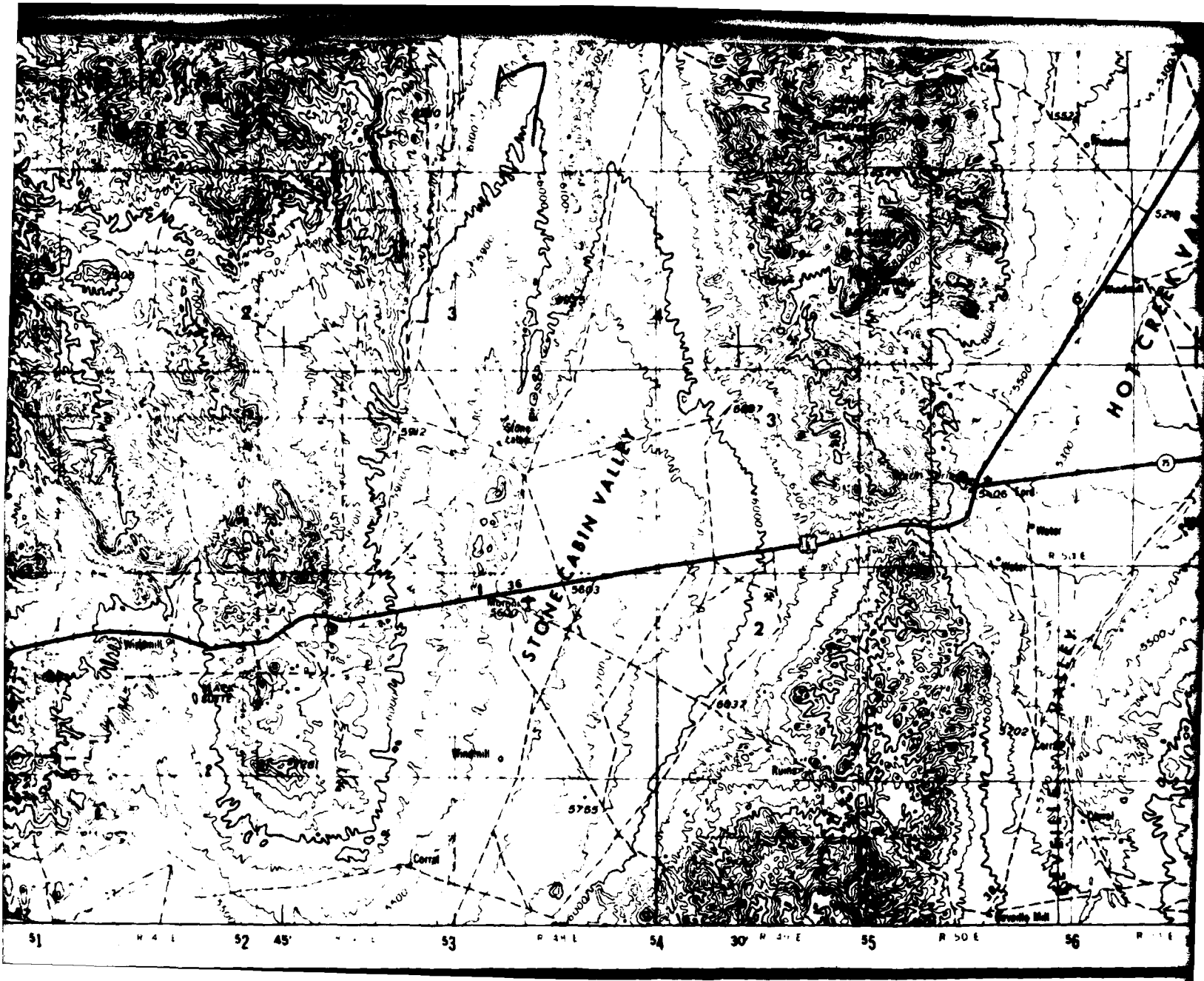




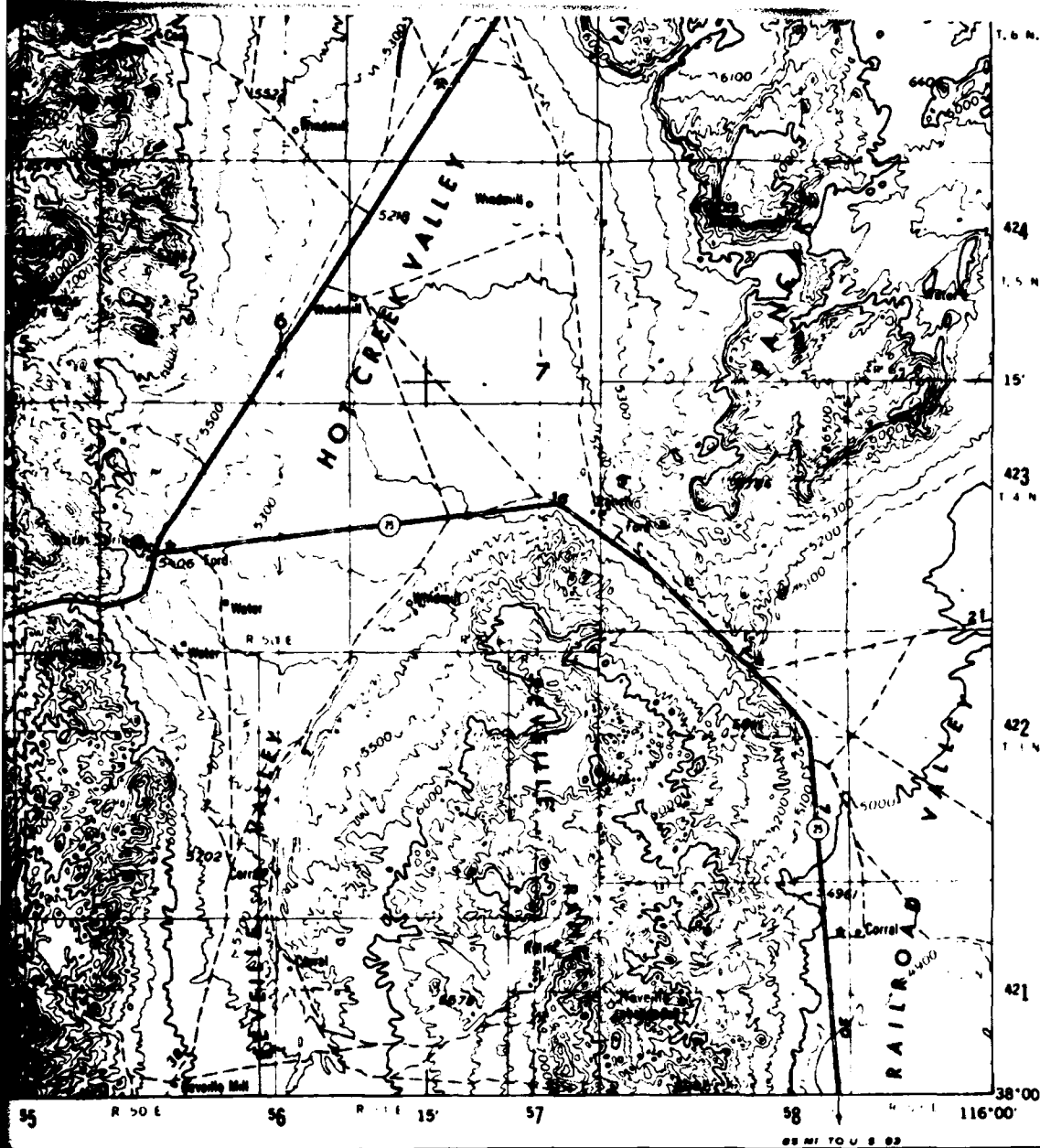












MX ADDITIONAL VALLEY MINERAL  
RESOURCES SURVEY STUDY AREA  
BOUNDARY SEPTEMBER 26, 1980



MX DEPLOYMENT AREA

**Ertec**  
The Earth Technology Corporation

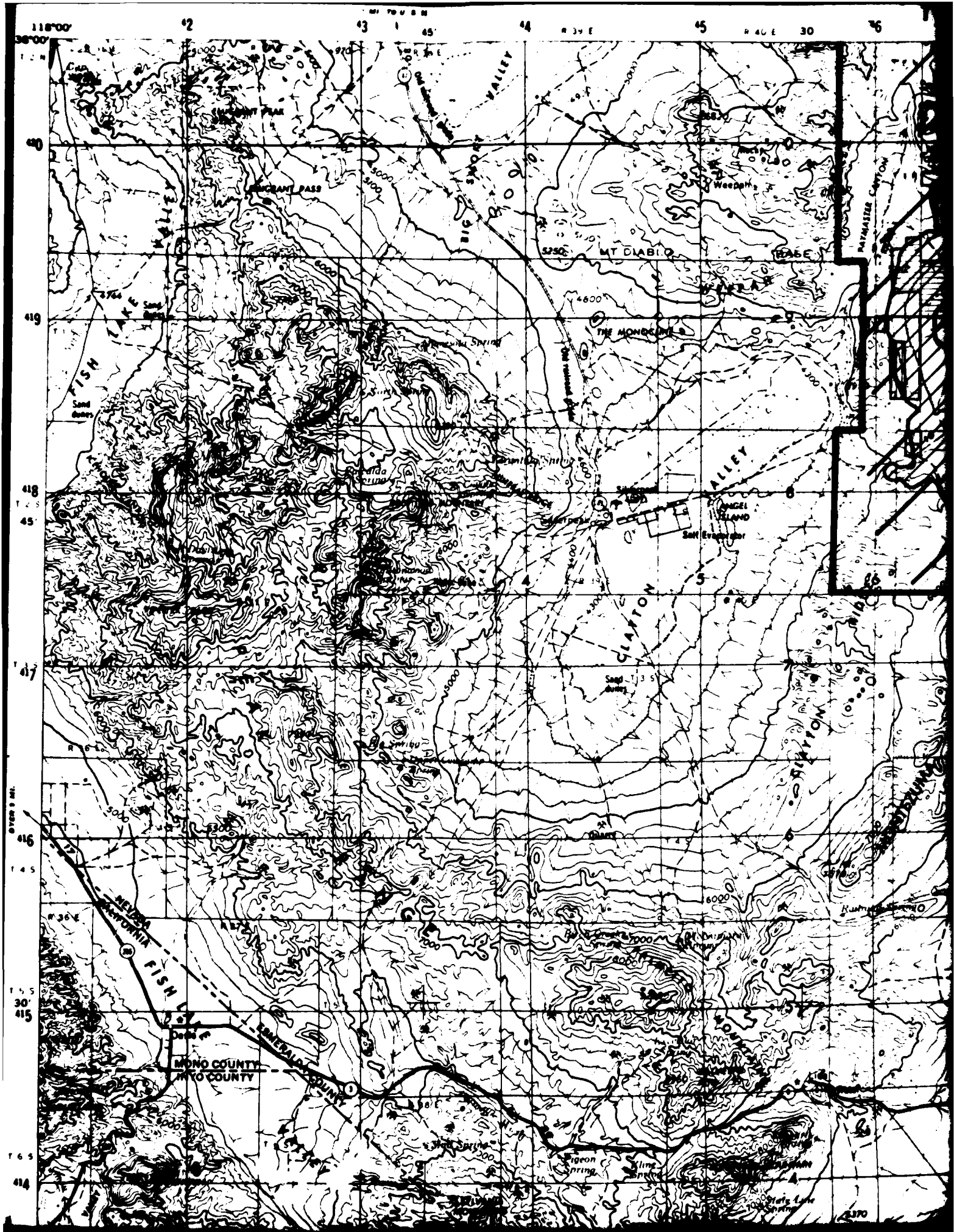
MX SITING INVESTIGATION  
DEPARTMENT OF THE AIR FORCE  
BMO/AFRCE-MX

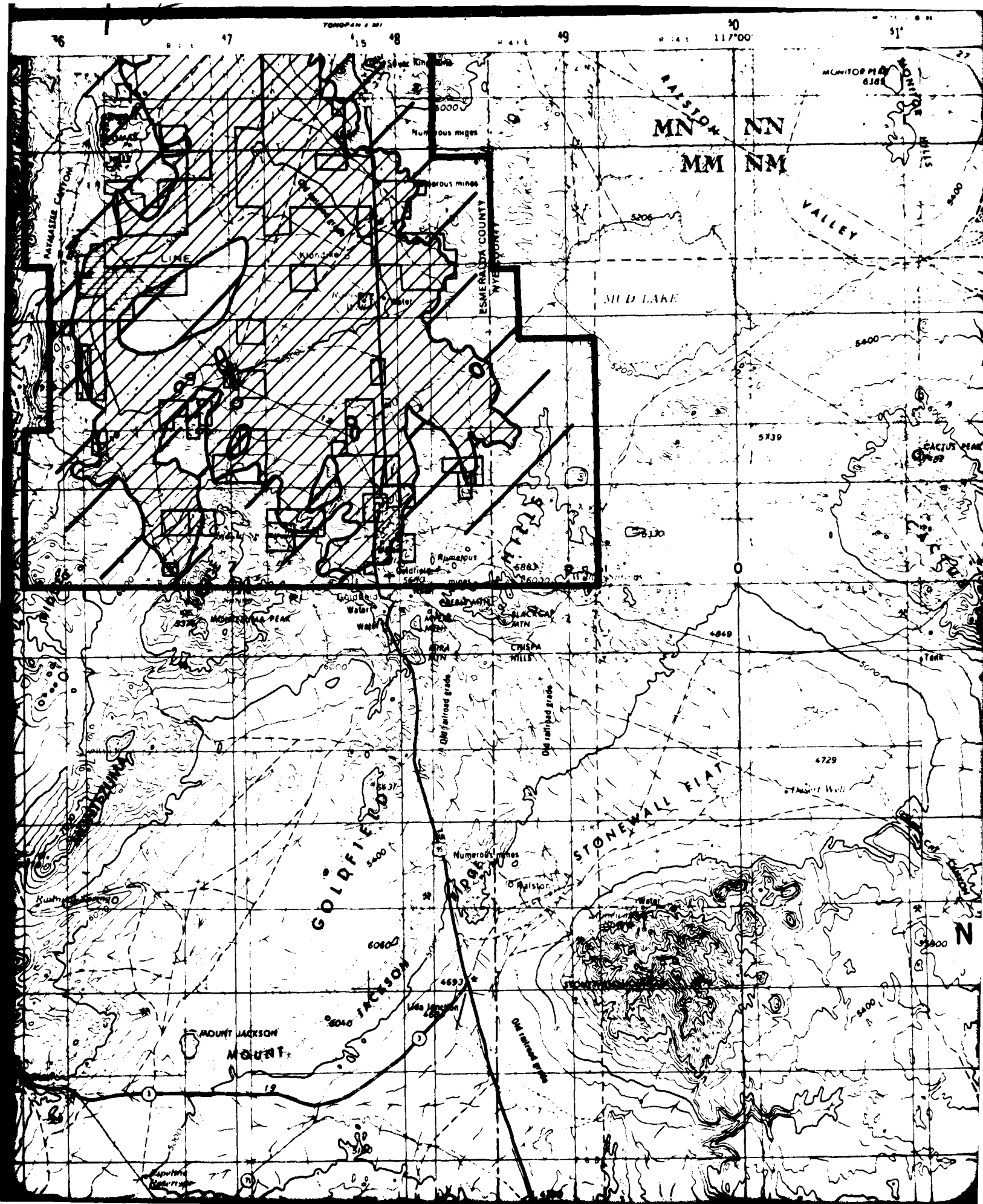
# LAND STATUS-NONFEDERAL LAND AND UNPATENTED MINING CLAIMS

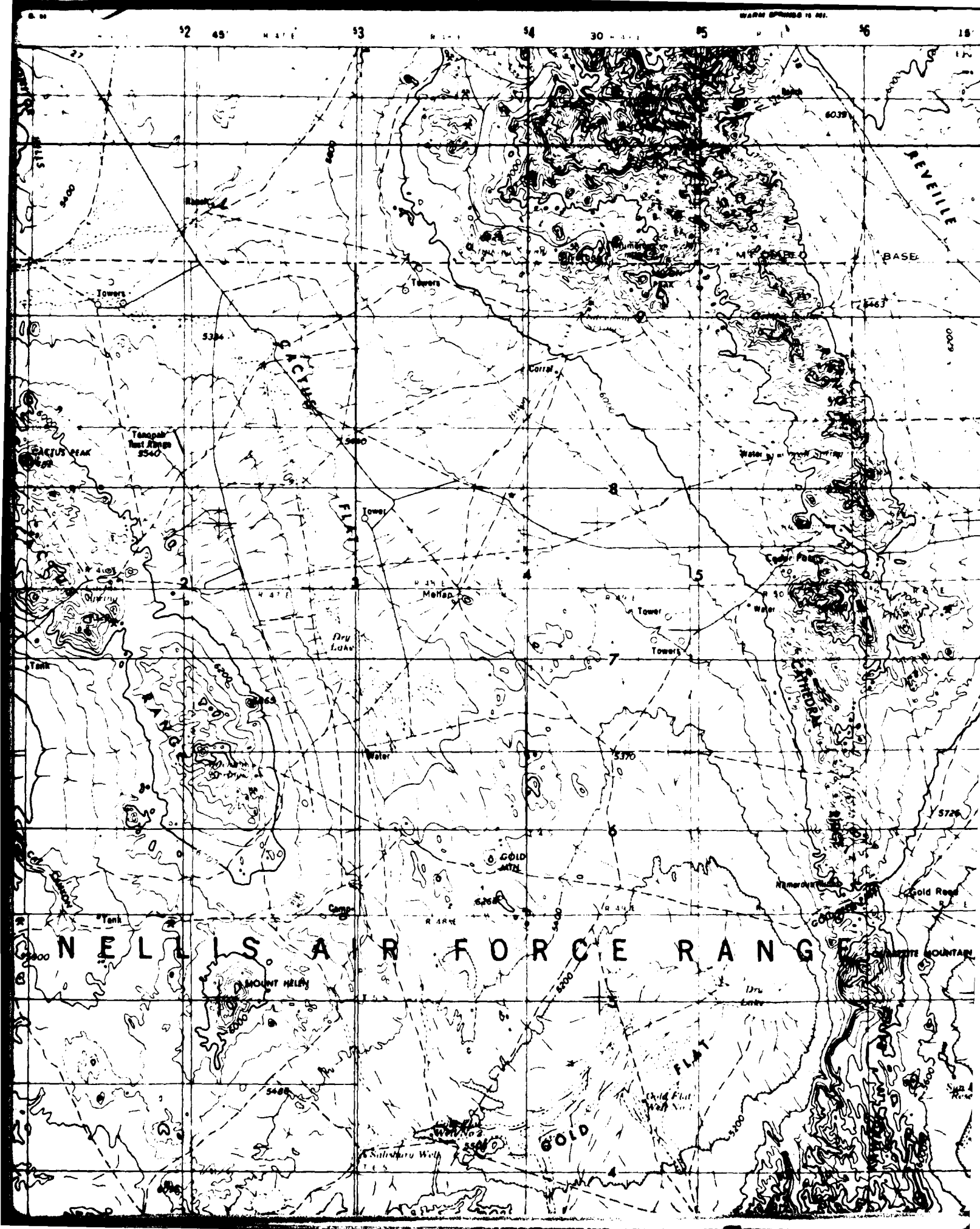
MAP 3 OF 4

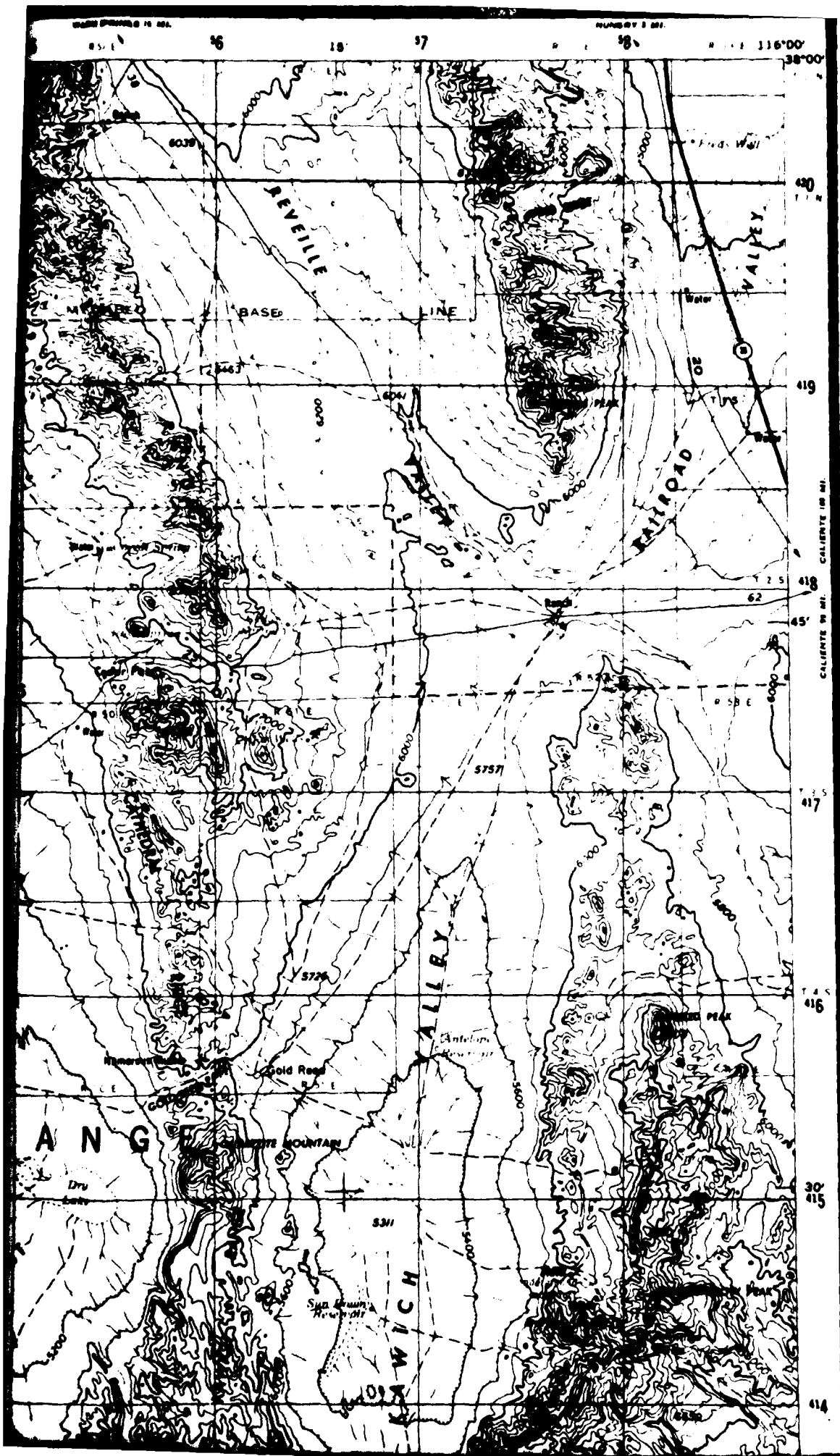
30 APR 81

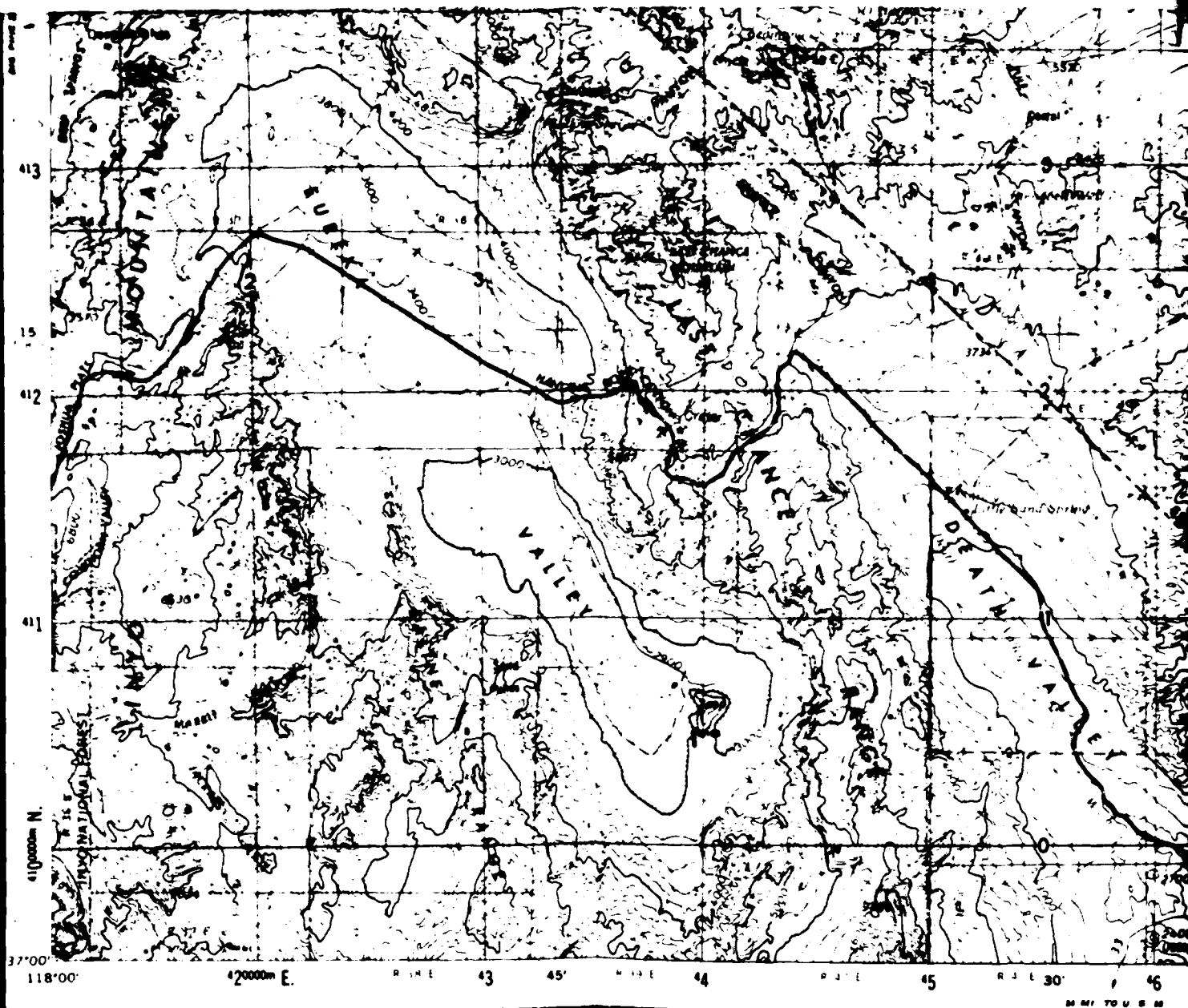
DRAWING 18











## GOLDFIELD 2° QUADRANGLE

Base Prepared by the U.S. Army Topographic Command, Washington, D.C.

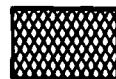
### EXPLANATION



FEDERAL LEASE LAND



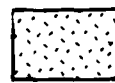
NON FEDERAL FEE LAND



STATE LAND



MATERIAL SITE



PATENTED MINING CL

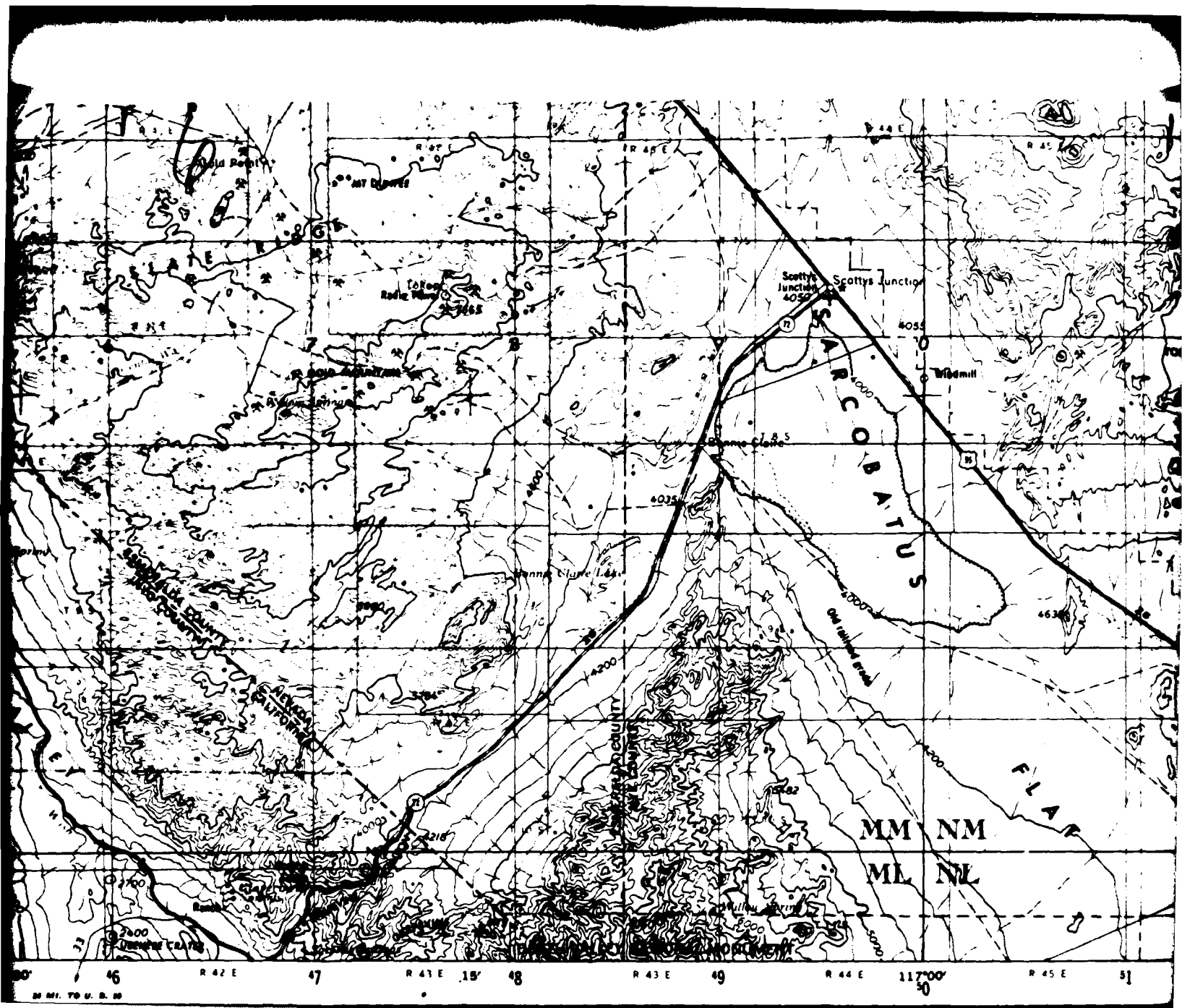


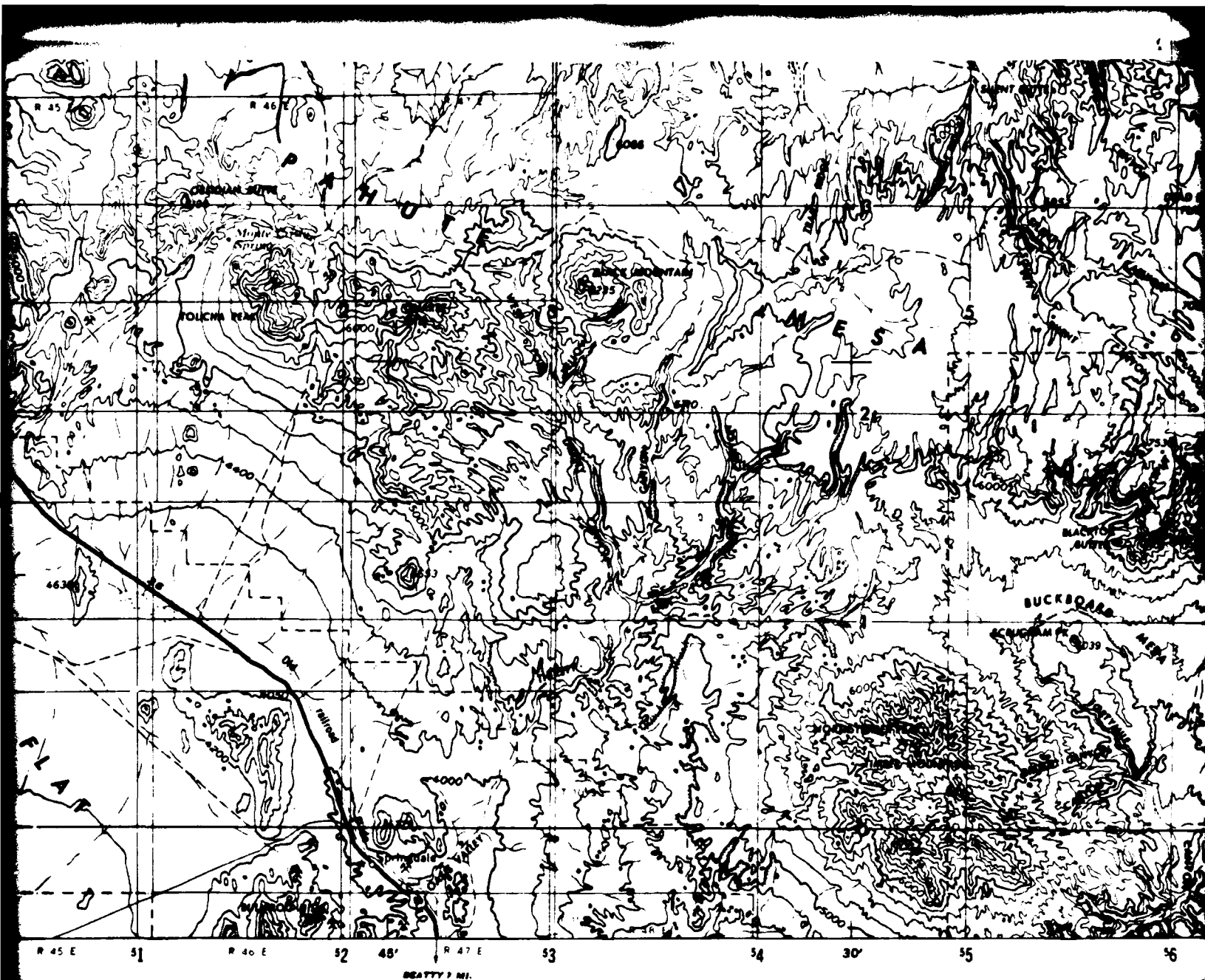
UNPATENTED MINING



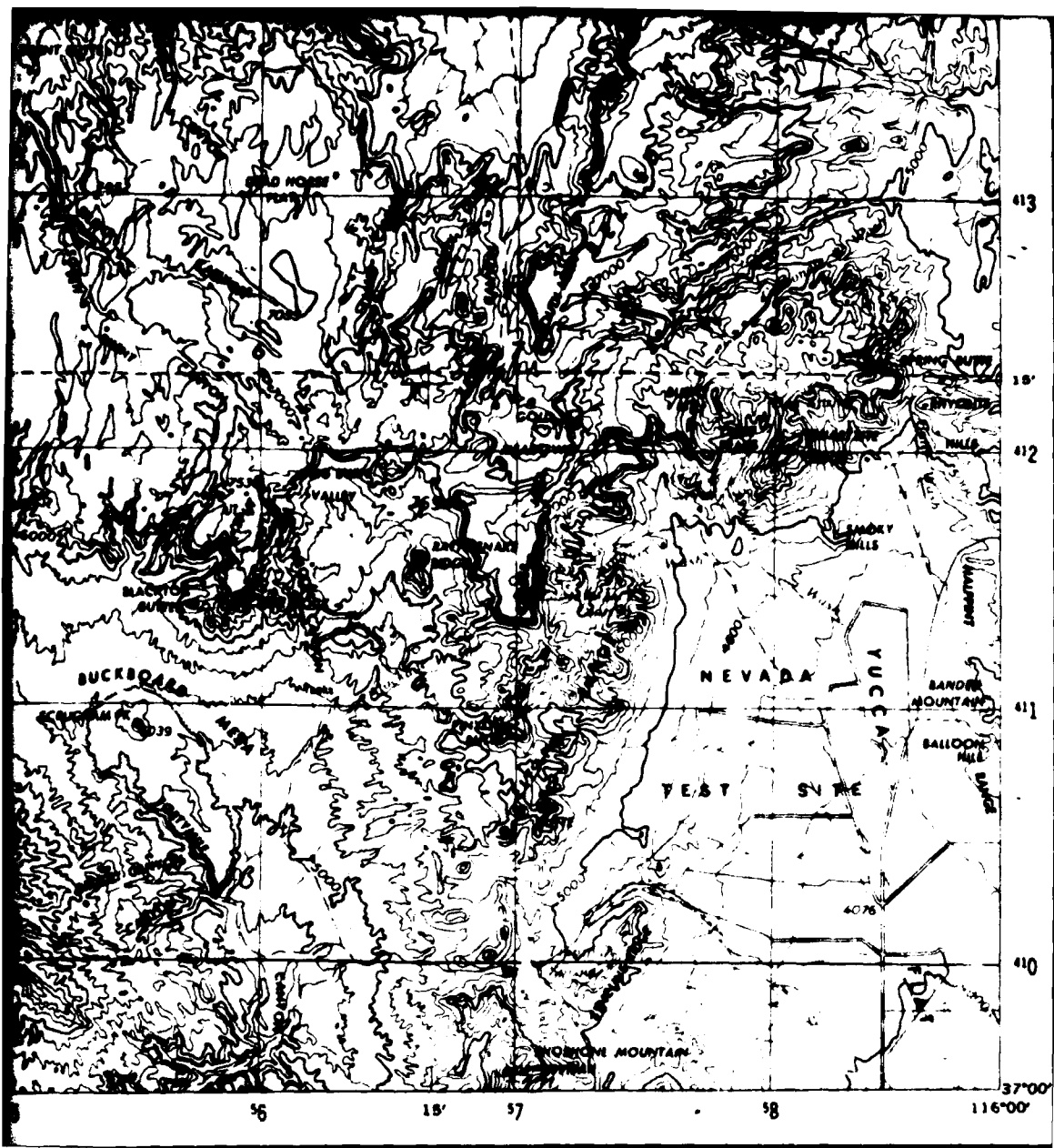
RECOMMENDED EXCL





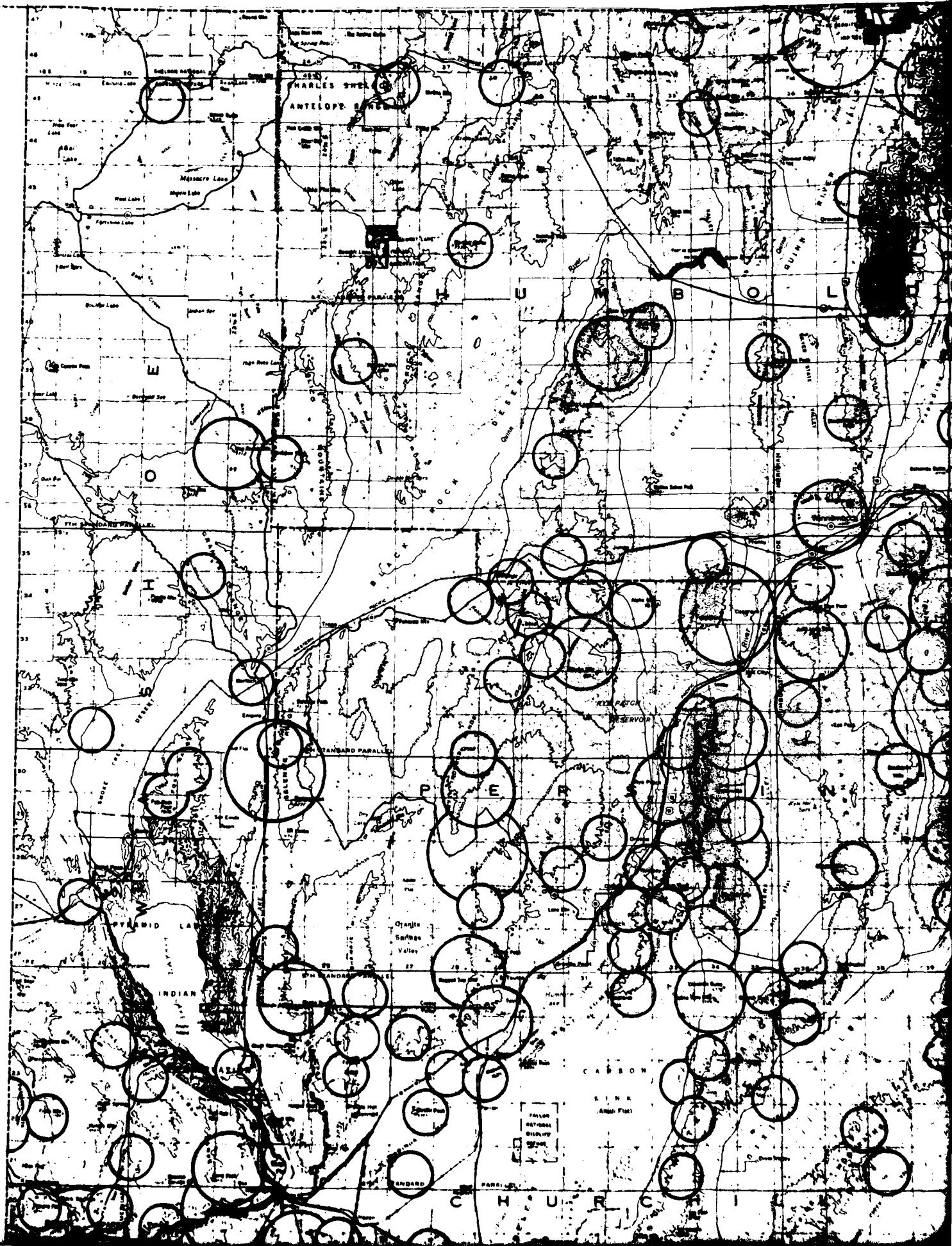






O R E G O N

C A L I F O R N I A



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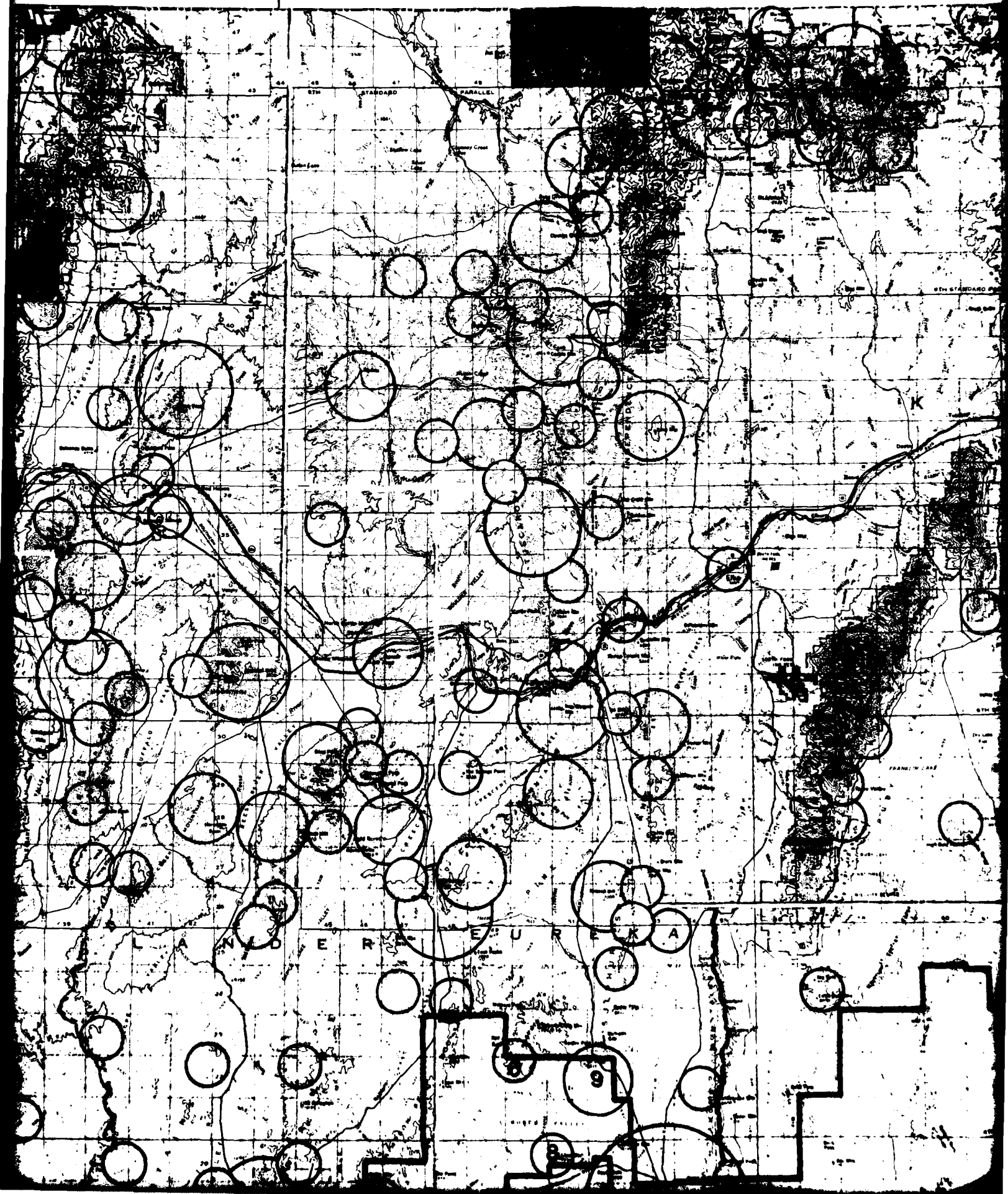
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Mining District  
Mine, Area, or Deposits

## WHITE PINE COUNTY

1. Cherry Creek (Egan Canyon, Gold Canyon)
2. Hunter
3. Newark (Strawberry)
4. Pancake Summit
5. White Pine (Hamilton)

## EUREKA COUNTY

6. Antelope
7. Eureka (Ruby Hill, Pinto, Prospect, Silverado, Secret Canyon, Spring Valley)
8. Lone Mountain
9. Mount Hope

## LANDER COUNTY

10. Dry Creek (Godber)

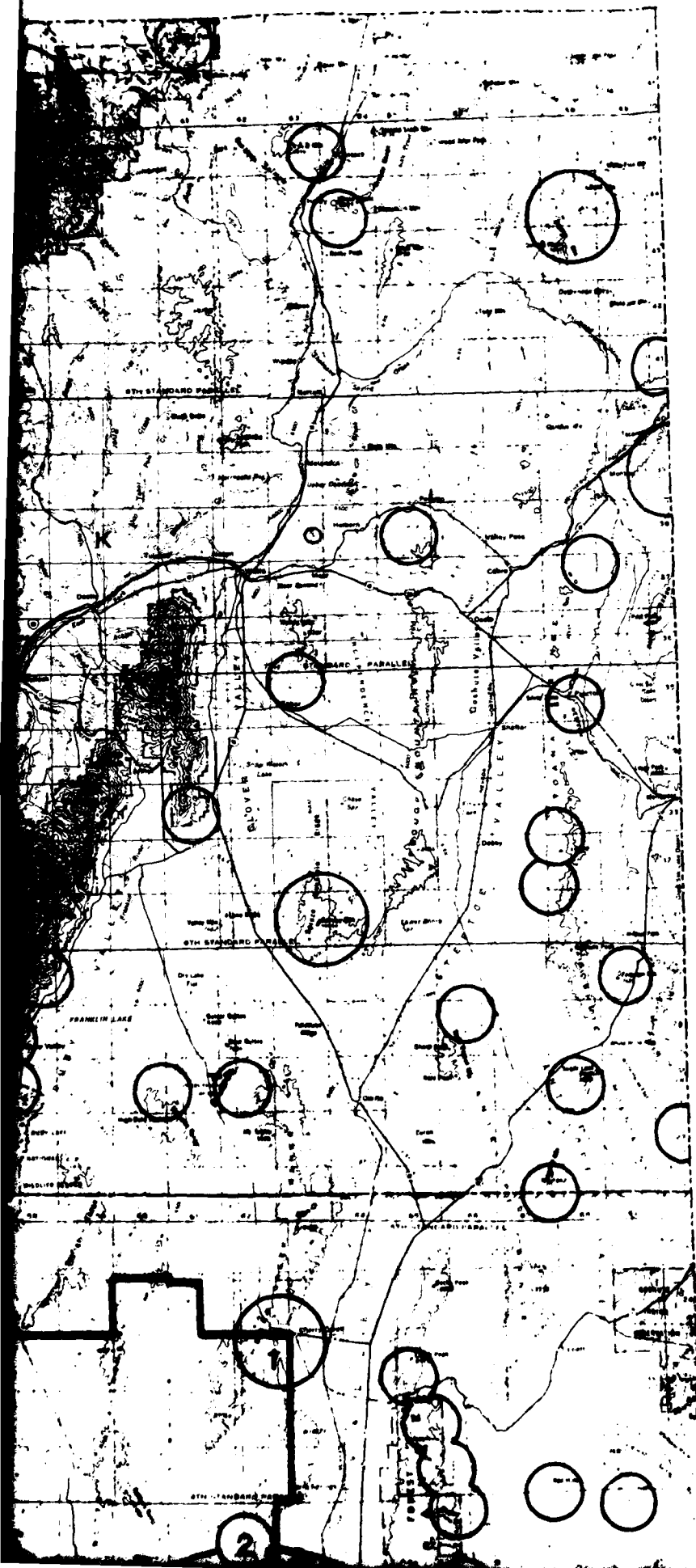
## NYE COUNTY

11. Crow Springs (Royston)
12. Coiten
13. Danville
14. Gold Hill
15. Horse Canyon
16. Jett (Ledbetter Canyon)

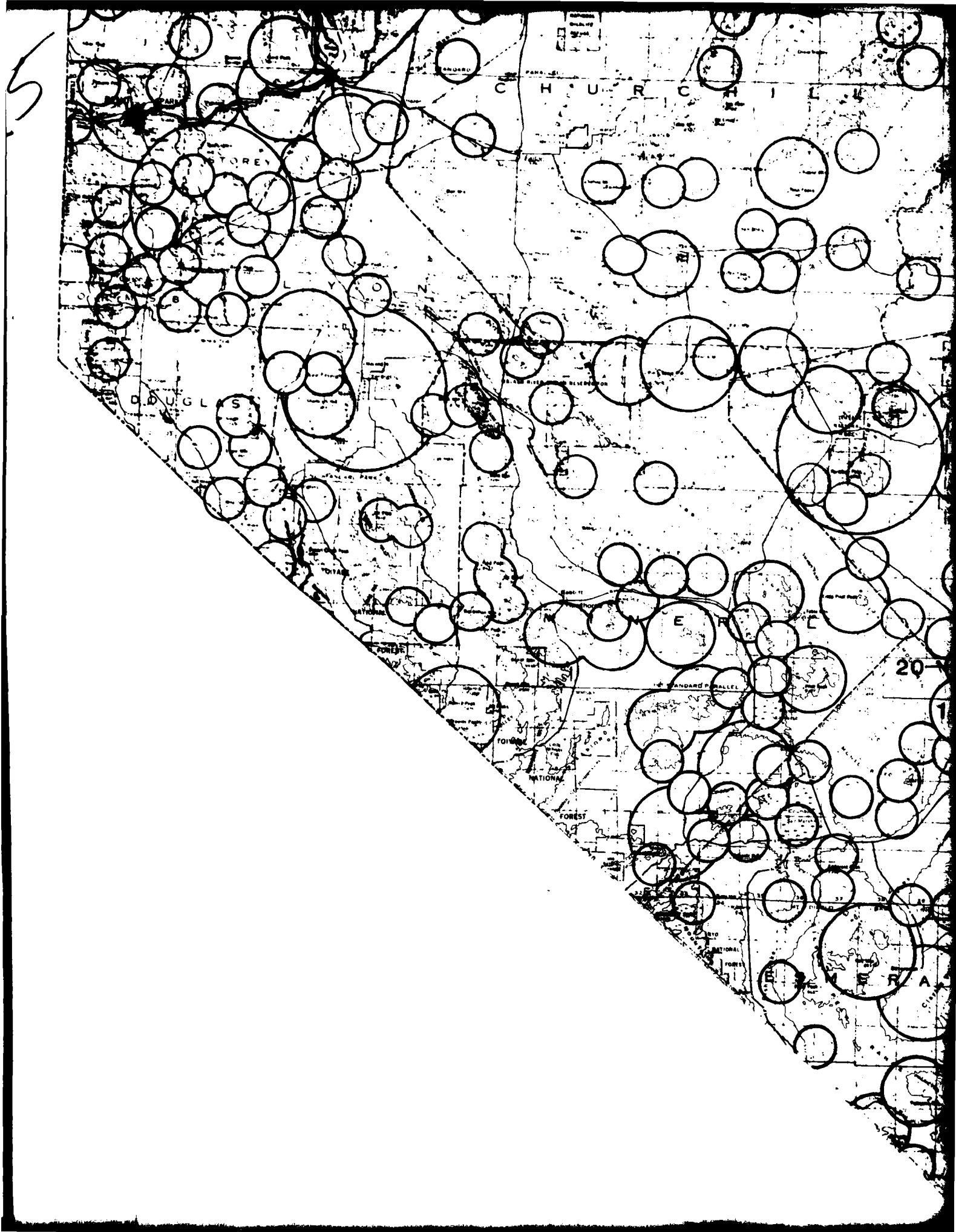
17. Manhattan

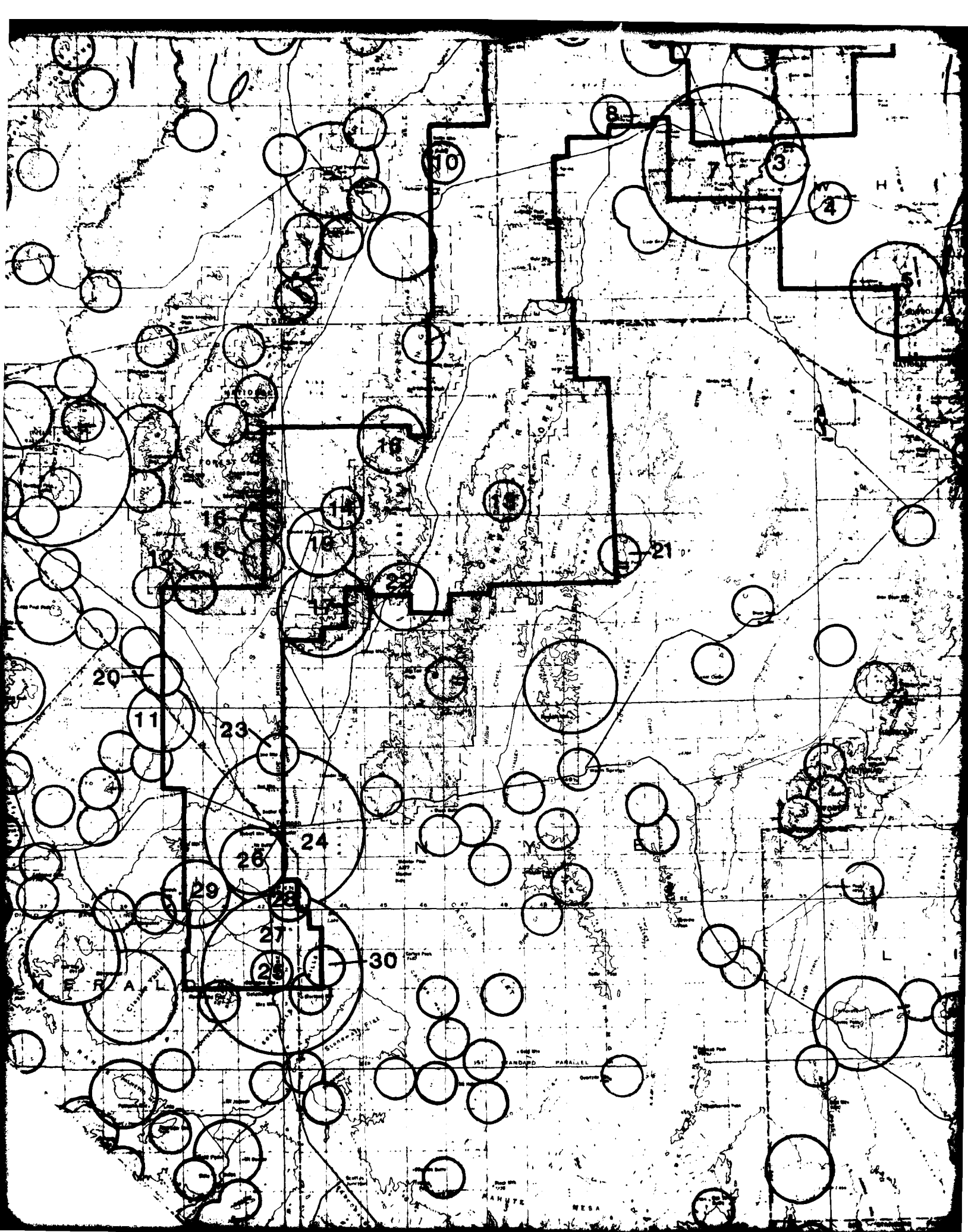
18. Northumberland

19. Round Mountain (Jefferson Canyon)



<u>Principle Commodity</u>	<u>Description ( Original mining district reference number from Mardirosian, 1974a, in parentheses )</u>
Canyon)	Tungsten, gold, silver copper, lead, flourspar Tungsten - irregular pipelike bodies in brecciated and silicified limestone along NE fault zones. Gold, Silver, Copper, Lead - veins Cambrian quartzite and in quartz monzonite intrusive; Gold placer deposits in Egan Canyon (502).
Lead, copper, silver	In brecciated Devonian (?) limestone at the contact with altered granite porphyry (507).
Silver, lead, copper, gold, tungsten	Silver, lead, copper, gold - quartz veins in limestone (514). <sup>2</sup>
Coal	N15W vein associated with siliceous iron ore, and interbedded with Mississippian (?) sedimentary rocks (516).
Lead, silver, gold, copper, zinc, tungsten	Lead, silver, gold, copper, zinc - replacement deposits along veins and bedding in Ordovician dolomite; saddle reefs in Devonian limestone below shale, associated with quartz monzonite and granodiorite intrusives (526).
Zinc, lead, silver	Replacement deposits along faults and bedding in limestone (175).
st, Valley)	Lead, gold, silver, zinc, copper, antimony Irregular and bedded replacement deposits, associated with fissures and faults in Cambrian limestone and dolomite, some disseminated deposits (181).
Zinc, lead, silver	Replacement deposits in breccia zones along intersection of NE and NW faults in Devonian Devils Gate limestone (184).
Zinc, lead, silver, copper	Replacement deposits in Permian (?) limestone near alaskite stock (189).
Turquoise	In argillized zones in shale, and dike (233).
Turquoise	Veinlets, lenses, and nodules in altered trachyte and porphyry; seams in chert along quartzite contact in the Triassic Excelsior Formation (147).
Flourspar	Vein in Tertiary rhyolite flows (361).
Silver, lead	NE and NW shear zones in Silurian (?) limestones (364).
Gold	Quartz vein in rhyolite (374).
Mercury	Shear zones in shale and leached sandy limestone (376).
Antimony, mercury, lead silver, gold	Antimony - N70E quartz veins in calcareous shale, near porphyritic latite dikes; Mercury - shear zones in shale and sandy limestone; lead, silver - NW veins in Permian sandstone; Gold - E-W shear zones in Tertiary rhyolite (379).
Gold, silver, antimony, turquoise	Gold, silver - veins in Cambrian (?) schist and limestone, in Tertiary rhyolite and andesite, and in granite intrusive; Gold placer deposits in Manhattan Gulch; Antimony - NW faults in the White Caps limestone Member of the Gold Hill Formation; Turquoise - shear zones in Ordovician shale and slate (388).
Gold, silver, barite	Gold, silver - carbonaceous and silicified shale associated with monzonite intrusive (393).
Canyon)	Gold, silver - E-W quartz veins in Ordovician shaly limestone and Tertiary rhyolite porphyry; Gold placer deposits at Round Mountain, south of Baldy, and Sunnyside Mine; Tungsten - veins in granite (400).











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Gold, silver, tungsten

monzonite intrusive (393).

Gold, silver - E-W quartz veins in Ordovician shaly limestone and Tertiary rhyolite porphyry; Gold placer deposits at Round Mountain, and south of Fairview, and Sunnyside Mines; Tungsten - veins in granite (400).

Silver, lead

Veins and shear zones in chert and andesite (401).

Silver, gold, lead

E - W veins in altered porphyritic quartz latite ( 392 ) .

Silver, gold, mercury, turquoise

Silver, gold- quartz veins and lenses in slates and limestones along the contact with siliceous granites; Gold placer deposits in Meadow, and Antone canyons. Mercury- quartz-barite veins in granite intrusive, tabular bodies in Ordovician (?) phyllites. Turquoise- at Monarchcamp, in altered and silicified shaly limestone ( 350 ).

Silver, gold, molybdenum

Silver, gold- veins in Permian volcanics; Gold in N 60 W quartz vein in Ordovician chert, and in seams and bunches in breccia zones in Tertiary rhyolite and latite. Molybdenum- quartz veins and disseminated in quartz monzonite porphyry ( 402 ).

Silver, gold, lead, copper, uranium

Silver, gold, lead, copper- replacement deposits along faults and minor fractures in Tertiary rhyolitic rocks and altered andesite. Uranium- Tertiary tuffaceous sediments ( 410 ).

Gold, silver

in argillized Milltown andesite, silicified dacite (149).

Silver, gold, lead

NW - trending lodes along shear zones in the Tertiary Fraction Breccia (153).

Gold, silver, copper, lead

N-S fracture system in argillized, alunitized, and silicified Tertiary Milltown andesite and overlying dacite (156).

Silver, gold, lead turquoise

Silver, gold, lead - quartz veins in Cambrian limestone, cut by thylolite dike and granite intrusives; Turquoise - veinlets, seams, and breccia fillings in cherty limestone and slate (159).

Silver, gold, lead, copper zinc, turquoise

Silver, gold, lead, copper, zinc - replacement deposits in Precambrian and Cambrian limestone and shale, along contact with diorite porphyry and granite intrusives; Turquoise - nodules in N20 - 45E shear zones in altered calcareous shale (161).

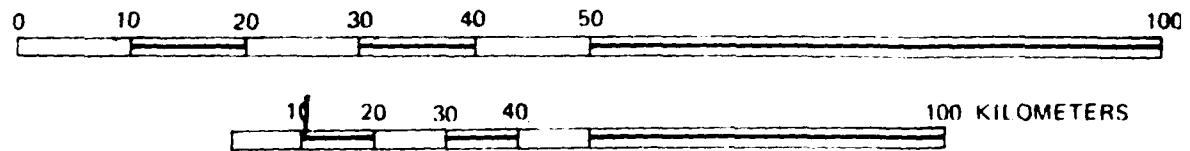
Gold, silver

NE fault zones in granodiorite porphyry intrusives and the Chorpagus Formation; gold placer deposits in Olinghouse, Frank Free, and Tiger Canyons (488).

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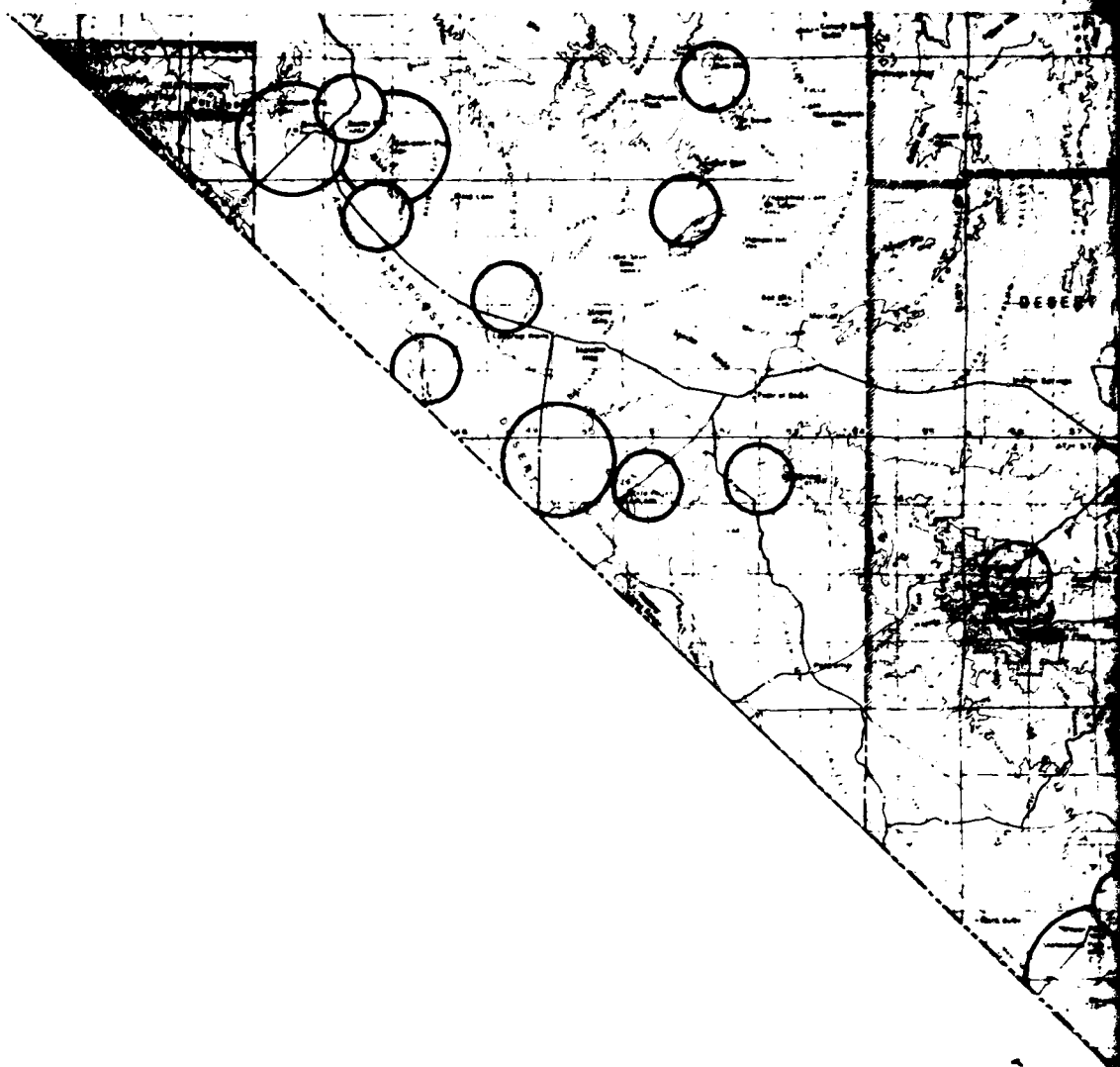
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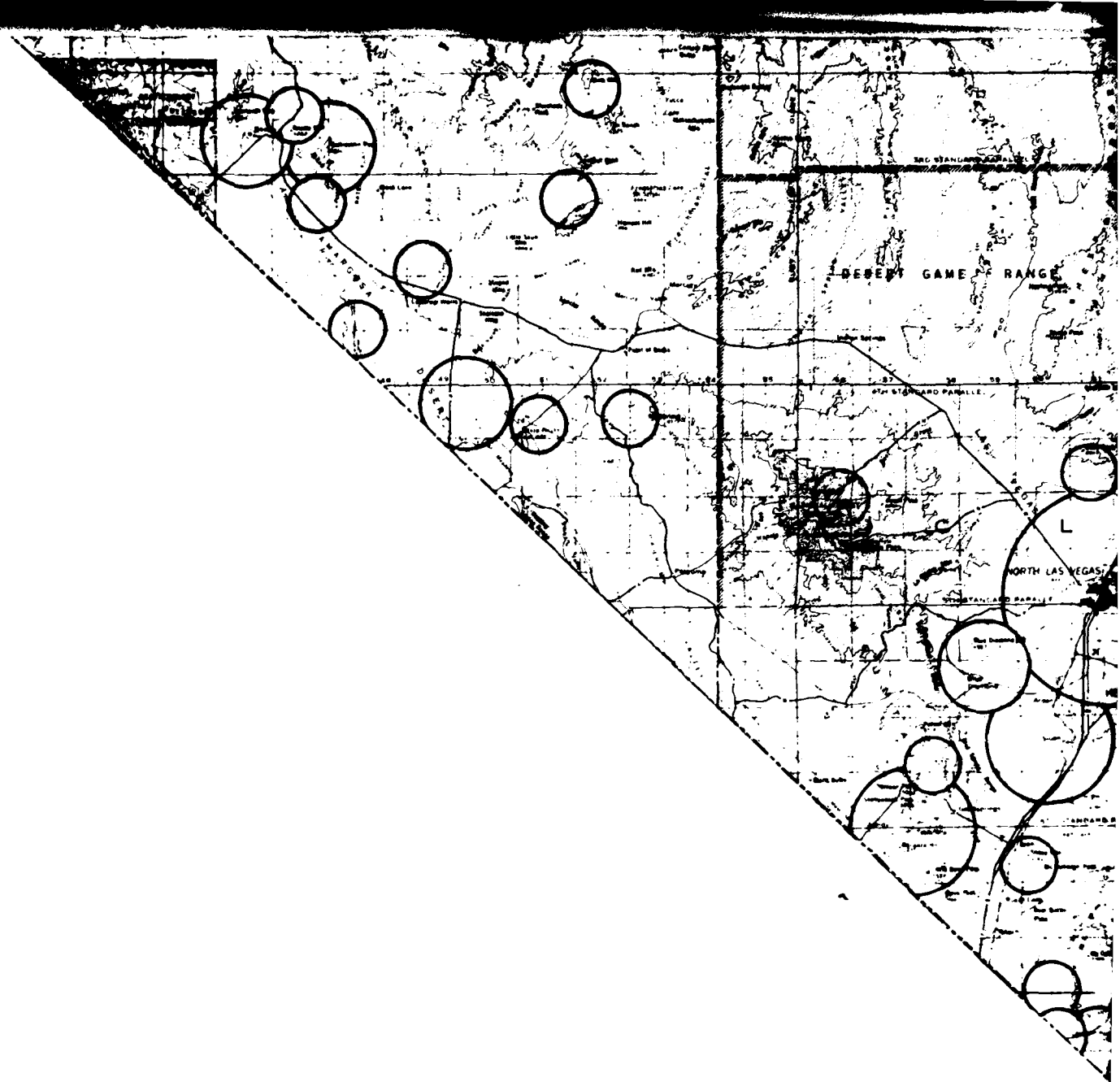
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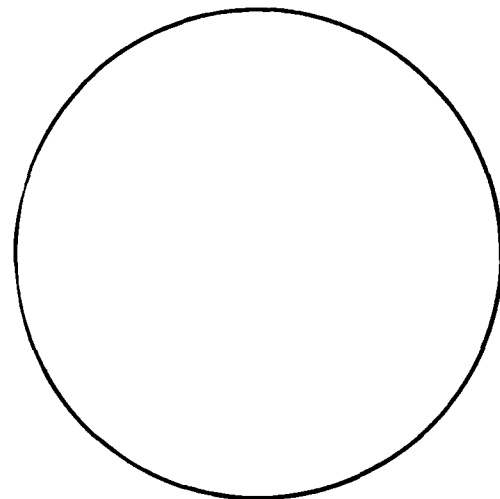
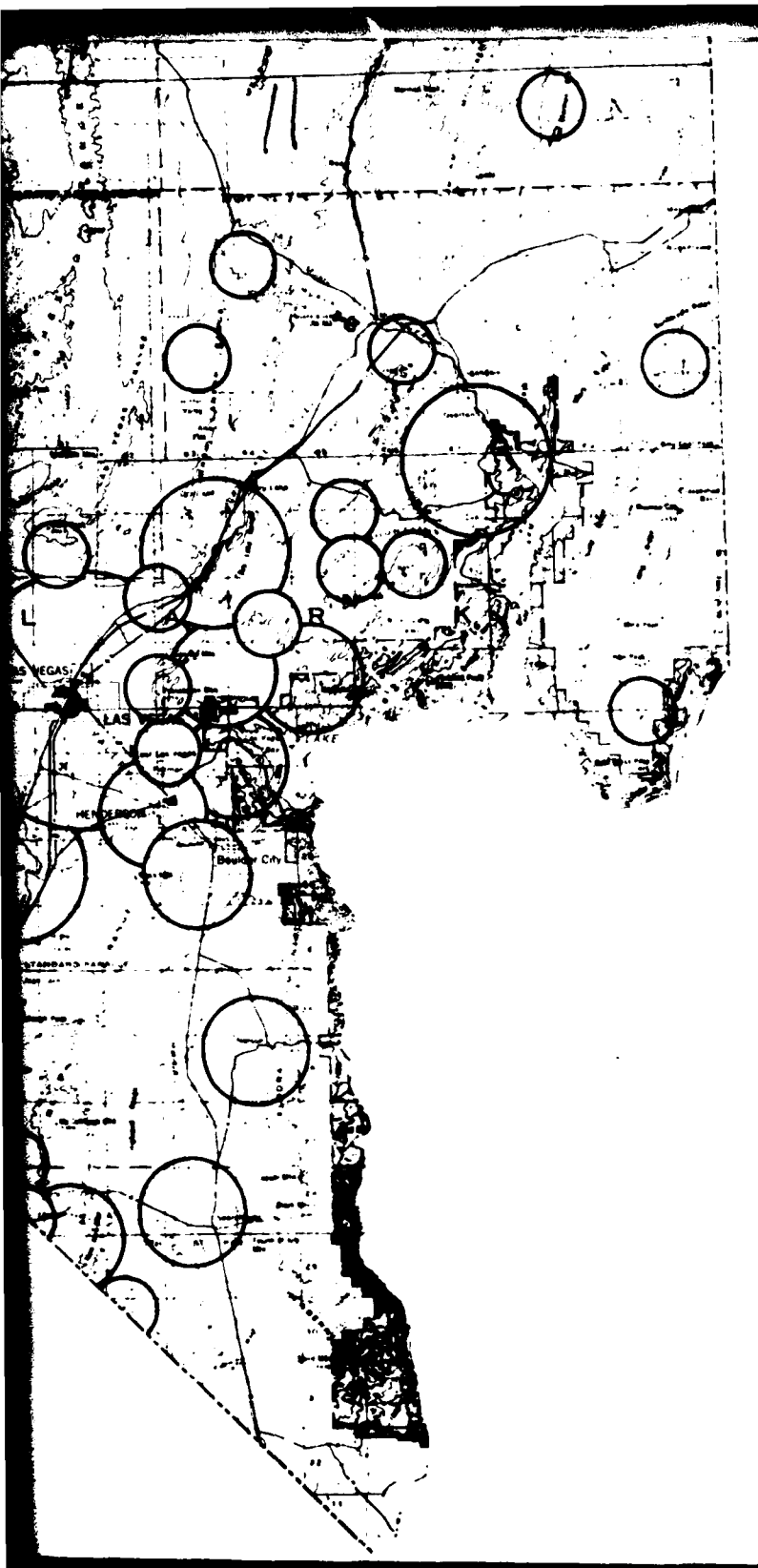
KILOMETERS



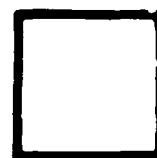
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MILES





1-2 BILLION

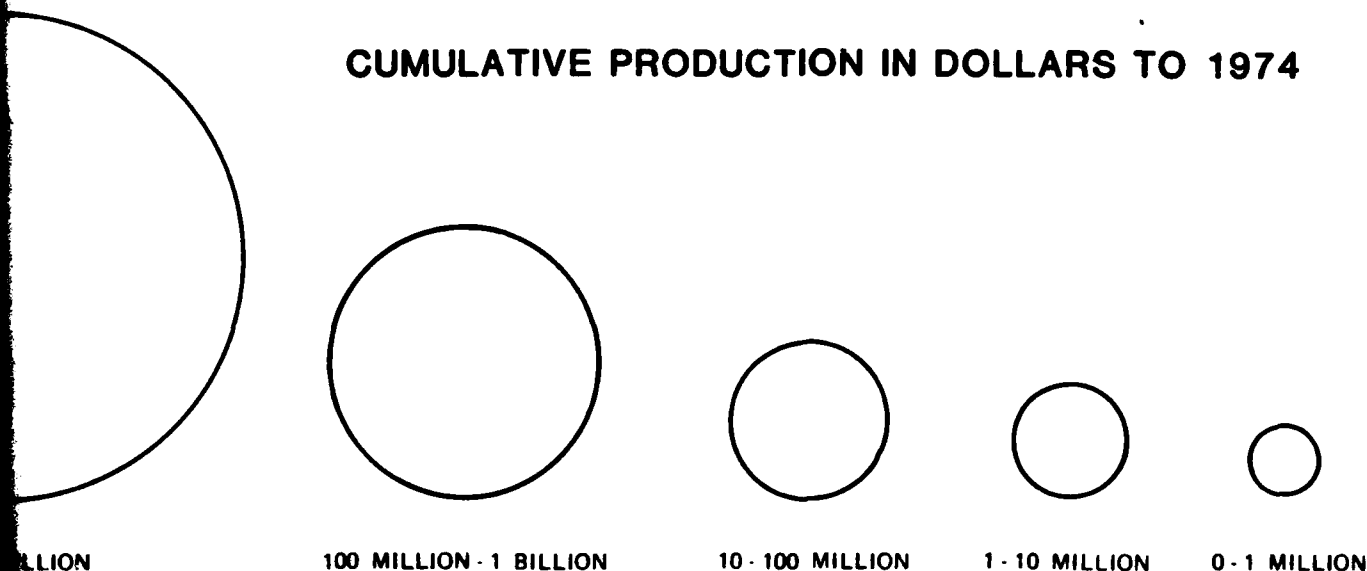


MX ADDITION  
RESOURCES  
BOUNDARY!

BASE MAP REDUCED FROM  
SURVEY MAP STATE OF I

MODIFIED FROM MARDIR

## CUMULATIVE PRODUCTION IN DOLLARS TO 1974



MX ADDITIONAL VALLEY MINERAL  
RESOURCES SURVEY STUDY AREA  
BOUNDARY SEPTEMBER 26, 1980

MAP REDUCED FROM U.S. GEOLOGIC  
MAP STATE OF NEVADA

REDUCED FROM MARDIROSIAN, 1974 a

**Ertec**  
The Earth Technology Corporation

MX SITING INVESTIGATION  
DEPARTMENT OF THE AIR FORCE  
BMO/AFRCE-MX

## MINING DISTRICTS OF NEVADA

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DRAWING 19